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THE MARINE CORPS GAZETTE



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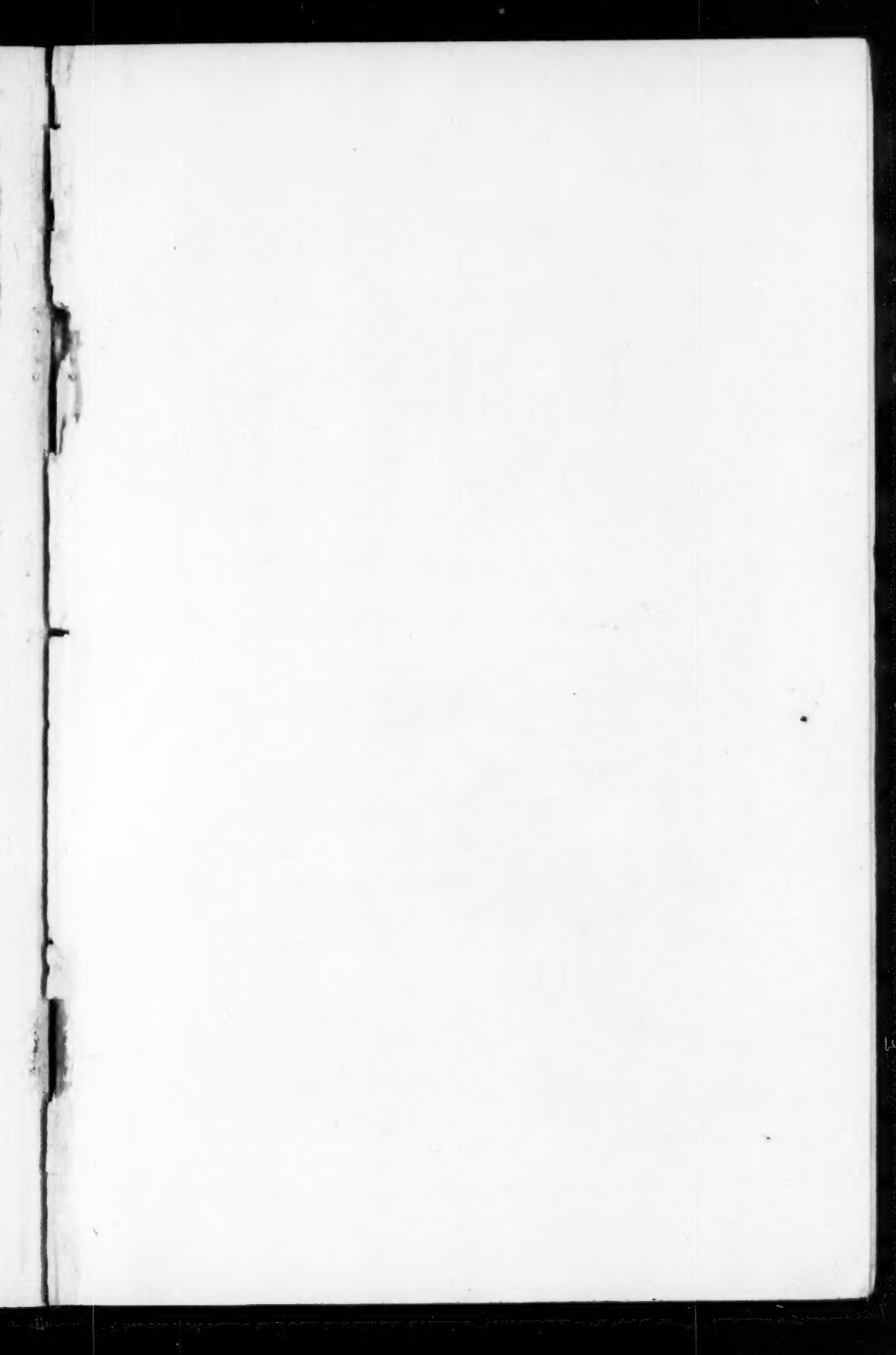
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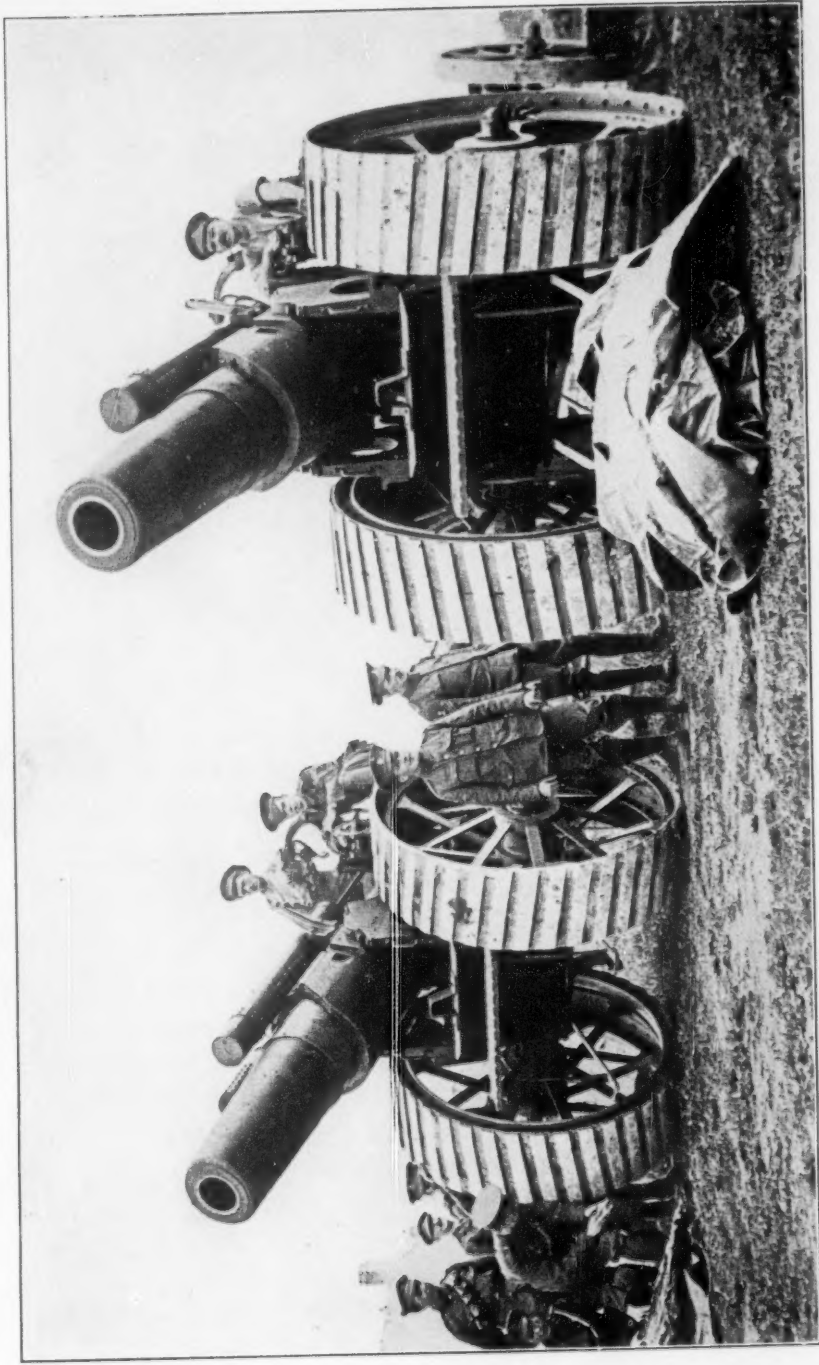
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The MARINE CORPS GAZETTE

Colonel Elisha Theall, U. S. Marine Corps, Editor.

Vol. III

MARCH, 1918

No. 1

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The Marine Corps Gazette

VOL. III

MARCH, 1918

No. 1

FOOT CARE IN MILITARY SERVICE¹

OFFICE OF THE SURGEON GENERAL, U. S. ARMY, THE DIVISION OF
ORTHOPEDIC SURGERY

THE maintenance of foot efficiency in the military service requires:

1. The use of the foot in a correct manner in standing and walking.
2. The wearing of the foot coverings of the correct shape and proper size.
3. The routine care of the foot and its coverings.
4. The immediate and careful attention to minor foot ailments.

CORRECT USE OF THE FOOT

"The human foot is an active organ of locomotion and not a passive support on which to stand and walk." Its usefulness depends chiefly upon the possession of full flexibility and good muscular control. To these the gait owes its spring and elasticity, and in proportion as they are lost it becomes less graceful and more laborious, until with complete loss, it becomes a mere prop for supporting the body weight.

Danger in Constant Standing.—The heel bone is not placed directly under the center of the ankle but decidedly to the outer side. On this account the ankle rolls inward, under the weight of the body, as soon as the muscles relax, that is, the foot will remain in the correct position only as long as the muscles hold it there. Now, as everybody, who has tried to see how long he could hold his arm out straight, knows, muscles soon tire out under the constant strain. This makes it clear why constant standing is so likely to cause pain in the feet and produce disability. Under primitive conditions man

¹Written specially for THE MARINE CORPS GAZETTE, upon request, through the courtesy of the Surgeon General of the Army.

stood still very little, but in modern life there are very many occupations which require almost continuous standing. Clerks, waiters, butchers, barbers, and others in similar occupations must be on the feet nearly all the time and they have little or no opportunity to use the feet actively. Hence, the muscles, tired out day after day, gradually become accustomed to the relaxed position and all effort to overcome it ceases.

Necessity for Training in Walking.—While walking is a natural process and hence one which under normal conditions of life is acquired without special training, yet this is by no means the case under the changed conditions imposed on the feet by our modern habits. Although not a complicated process, walking still requires a certain degree of training and skill to insure proficiency. The phrase so often heard, "I am a poor walker," practically always means that the individual has not acquired the art of walking rather than that he does not possess the necessary strength. Frequently the trouble begins in earliest childhood. In learning to walk a child may acquire an improper gait on account of general weakness, excessive weight, or improper footwear; similarly, even after it has learned to walk properly, it may later develop an improper method from the same causes. In adult life a faulty gait is even more readily acquired, or perhaps it may be better expressed by saying that a correct gait is preserved only by constant watchfulness. The bad effects of the conventional footwear, the increased amount of standing required by most occupations and the general inactivity of the average individual are influences constantly tending toward the production of foot weakness and inefficiency.

Proper Manner of Standing and Walking.—The straight position of the foot, that is, with the feet parallel, is the proper one for both walking and standing. It tends to throw the weight toward the stronger outer portion of the foot and thus to protect the arch, while toeing out allows the stress to fall on the weaker inner portion and so predisposes foot strain.

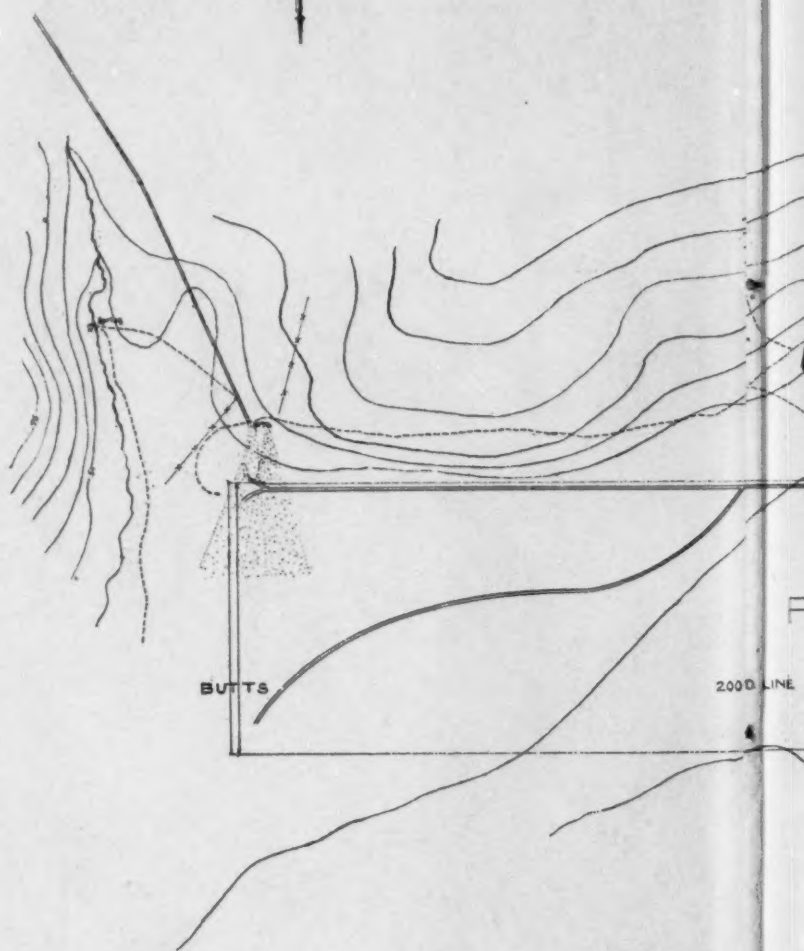
Standing still for long periods is detrimental as has already been explained; when obliged to stand, the weight should be thrown toward the outer portion of the foot in order to combat the constant tendency of the ankle to roll inward and should be shifted from one foot to the other to allow the muscles alternate periods of rest.

In walking, insistence must also be laid on the importance of lift-

PLANTING SITE



MAGNETIC NORTH



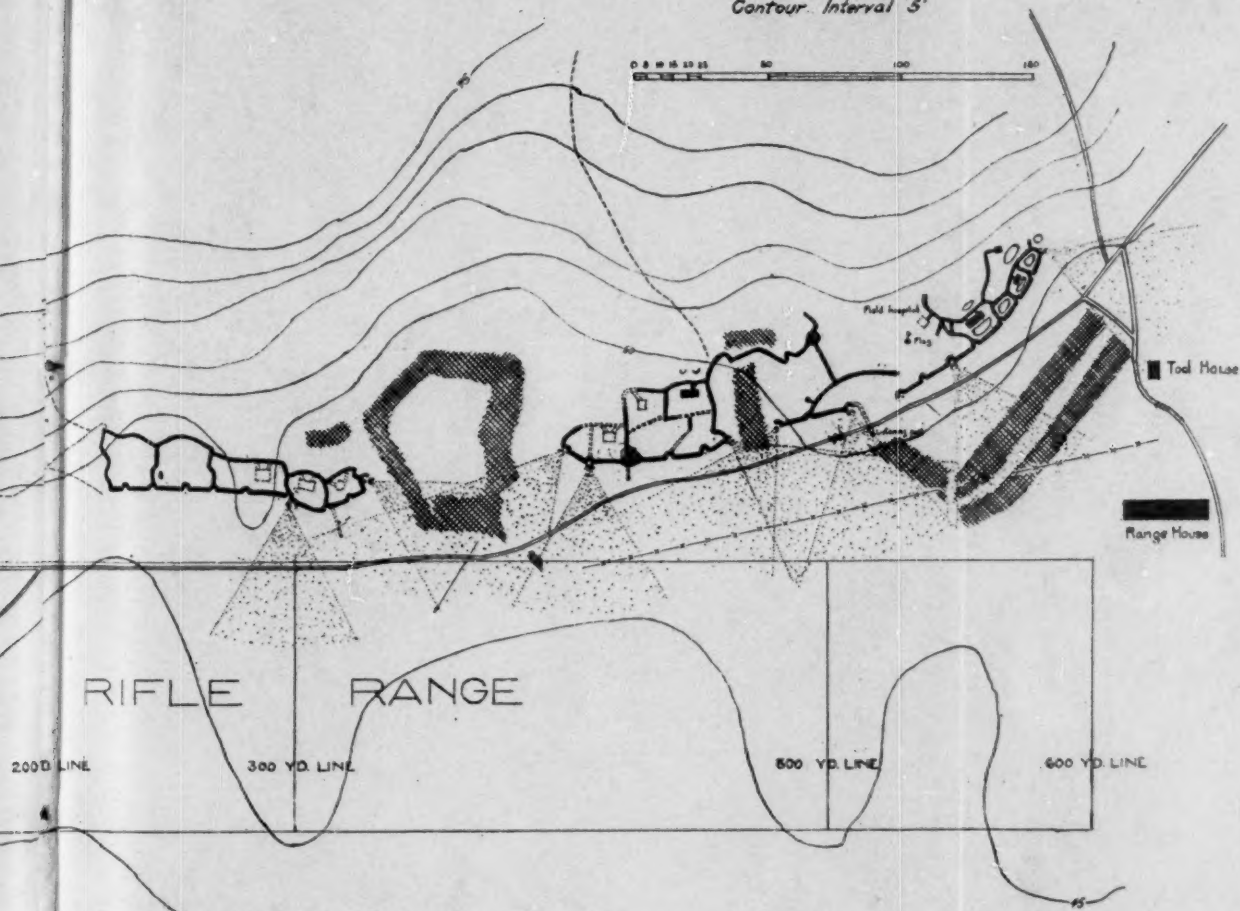
BUTTS

2000 LINE

TOPOGRAPHIC MAP
OF
TRENCH SYSTEM, U.S.M.C. RESERVATION
QUANTICO, VA.

By Lt. L.R. Long, U.S.M.C.
and
Range Takers, 77th Co., First M.G.B.

Drawn Nov. 2-4, 1917
Scale 1" = 50 yds
Contour Interval 5'



ing forcibly on the ball of the foot. Indeed, the efficiency of a foot may be measured by the strength of its thrust. This is readily understood by studying the manner in which the muscles controlling the forefoot are arranged. These muscles, which are placed in the calf of the leg, and in long leaders which pass under the inner and the outer ankle bones (like ropes around a pulley), cross under the sole and are fastened into the forepart of the foot and the toes. It is clear then that in their relation to the arch of the foot they resemble the string of a bow, and the harder one lifts on the ball of the foot, the tighter they will be drawn and the better the arch will be supported. If one lifts lightly or not at all, these muscles, being called upon to do little or no work, become gradually weaker and weaker; on the other hand, the stronger one lifts, the more work the muscles are called upon to do and the stronger they become.

Another point to be remembered is that, in lifting on the forefoot, the vigorous walker throws the weight a little to the outer side, that is, as the step is being completed and the foot has reached the point where it is leaving the ground, it is in a position of slight in-toe. This is done in order to fully utilize the strength of all the toe muscles, since each of the smaller toes is placed a little back of the toe on its outer side. That greater strength is secured by using the foot in this manner is shown by the fact that the runner in getting a quick start, as in the hundred yard dash, toes in decidedly.

Correction of Bad Foot Habits.—In order to permanently overcome a tendency to foot strain (pain in the feet on exertion), it is evident, therefore, that the individual must acquire and practice the art of using the feet properly. A brace or other support may relieve the discomfort temporarily (and is often necessary for a time) but a cure is to be obtained only by removing the cause of the trouble. As long as the foot is not impaired by disease, the ailments and discomfort which develop on use may readily be overcome by anyone who possesses ordinary intelligence and is not too lazy or indifferent to put forth the small amount of effort required. If a shoe of proper shape and fit is worn, it then becomes merely a matter of training the feet in the proper method of standing and walking just as one trains one's hands to catch a ball, handle tools or do any kind of work or play. Moreover, the relatively coarse and simple movements required in walking are naturally much easier

to learn than the more delicate and complicated ones usually demanded in most of the things we are called on to do with our hands.

In addition to persistent practice in walking, special exercises are of value in re-educating and strengthening those muscles particularly at fault. They should be performed carefully and in a forceful and snappy manner; the feet should be bare for the toe exercises, at least. Many exercises may be used, but the following few will be found sufficient, if practiced with diligence and in the proper manner:

1. Rotating the legs outward; stand with feet parallel, or slightly toed in, and twist the legs outward from the hip, keeping the knees straight and the great toes as closely in contact with the ground as possible.

This is a pure hip motion, the leg rotating (turning) outward at the hip and ankle with the foot remaining fixed; it calls into play the muscles which rotate (turn) the hip outward; its action in correcting pronation (sinking of the foot inward and downward) and throwing the weight on the stronger outer portion of the foot is striking. This exercise will be very frequently found difficult for persons with weak feet to learn.

2. The balls of the feet are placed on the sharp edge of a depression in the ground with the toes projecting over the edge. A thick board, table or other secure support may be used. The toes are deliberately bent downward as far as possible. If the toes do not bend readily, assist them with the hands until they become more flexible.

3. The foot is moved backward to a flat surface, and the toes are lifted.

4. In the same position the toes are separated and then closed. At first it may be necessary to assist this movement with the hands.

These three exercises develop the muscles of the toes, both the long muscles in the calf and the small ones in the foot itself, and raise the anterior arch.

In recruiting, many men are found with structurally good feet but with a muscular development which, while sufficient to meet the demands of their work in civil life, is yet much below the average. In such cases drill should be begun more guardedly than usual and increased gradually. Drill without weight will do the feet good but

sudden strain, due to excessive drilling or to a too early use of the pack, will soon produce disability.

THE WEARING OF PROPER FOOT COVERINGS

A correctly shaped and properly fitted shoe is the first essential for foot care in the military service. A correctly shaped shoe is one which adapts itself well to the heel and waist (middle) of the foot, so as to prevent the foot from slipping around in the shoe, and at the same time allows the free action of the toes. It is of particular importance that the front of the shoe be straight enough on the inner edge to allow the great toe free play and not push it towards the outer side. Only by giving the toes plenty of room, so that they can grip the ground properly, will the best use of the foot be possible.

In order to assure a properly fitted shoe, the recruit will require two or three careful fittings in the first six months of his service owing to the rapid change in the foot under active training. After six months the size remains fairly constant. Sufficient length is the most important requirement to be met. For military use the shoe should be a size and one-half or two sizes longer than the foot, that is, about a finger's breadth longer. Owing to ignorance of the difference of the requirements in military and civil life, the recruit frequently strongly objects to wearing a long enough shoe. The width that is required varies according to the kind of stockings and the number of pairs worn. In judging width, therefore, one must take into consideration the conditions as regards climate, season and probable trench service.

The importance of a properly fitting stocking needs also to be emphasized, as a too short stocking also compresses the toes and interferes with their free action, while a too long stocking wrinkles and thus may give rise to a blister. As a general rule a stocking should be about two sizes larger than the shoe.

THE ROUTINE CARE OF THE FOOT AND ITS COVERINGS

Care of the Feet.—For the soldier to take proper care of his feet is a duty not less important than to see that his gun is kept in perfect condition; a pair of disabled feet may render him unfit for further service and make him a far greater expense to the Government than the mere furnishing of a new gun.

Cleanliness is of the utmost importance in keeping the feet in good condition. Unless this is attended to systematically, the skin becomes softened and irritated by cast-off particles of skin, dirt and sweat; hence blisters and abrasions (places where the outer layer of skin has been rubbed off) are more likely to form.

The feet should, therefore, be carefully washed each day, using tepid or, in the field, cold water and very little soap, warm water and much soap tends to soften the skin; it is usually best for troops in the field to attend to this soon after arriving in camp, as there may be no opportunity later. "No great amount of water is necessary for this purpose. In the field, streams or bodies of water are usually available; a canteen full of water, poured on a poncho, which has been spread over a slight depression scraped in the ground thereby forming a water-tight foot bath, is quite sufficient. In the absence of even that amount of water, quite good results can be obtained by thoroughly wiping off the feet, especially between the toes, with a wet handkerchief or the end of a towel moistened with a few spoonfuls of water." After washing, the feet should be rubbed thoroughly to remove all loose particles of skin and then in the summer well powdered and in winter well greased.

The toe-nails should be trimmed every ten days, being cut squarely across as rounding the nails favors the development of ingrown nails. Thick, misshapen nails should be pared down and filed or sandpapered smooth.

Care of Shoes.—Daily attention to the shoes is necessary if one hopes to avoid the discomfort and disability due to changes in their shape and to wrinkling of the leather.

If not wet or damp, they should always be carefully cleansed at night, the inside wiped out with a cloth and the leather oiled often enough to keep it pliable.

When wet, they must be dried slowly, as the leather is hardened by rapid drying. A rapid and satisfactory method is to heat clean pebbles in the mess tin and then shake them around inside the shoe until it is properly dry, or oats may be heated in the same manner and put in the shoes over night; if neither of these is at hand, hot cloths or even paper may be used. When nearly dry the shoes should be carefully cleaned and the leather worked and oiled lightly to keep it pliable.

The shoes should be kept at night in a dry place; a good plan is to hang them to the ridge pole of the tent, but if the shoes are

moist and the weather very cold, it is better to cover them up in order to prevent freezing. They should never be used as a head rest at night as this spoils their shape.

Care of Stockings.—A light woolen stocking is considered best for all-round military wear. In very cold weather a heavy woolen stocking, or two pair of light ones, may be required. For marching, the stockings that are free from holes and undarned should be worn. The stockings should be washed after washing the feet, stretched thoroughly and dried.

If it is not possible to wash the stockings, they should at least be dried, beaten and worked with the hands to remove all dirt and to soften them.

ATTENTION TO MINOR FOOT AILMENTS

Only by giving careful attention to foot ailments as soon as they appear will it be possible to keep the feet in the best condition. Corns, callous places, ingrown nails and other affections of the toes are due to badly shaped or improperly fitted shoes, especially those that allow the toes insufficient room; they are usually soon relieved by the use of the proper shoe. The chief ailments to be considered therefore are blisters and abrasions, more common in warm weather, and chilblains, trench foot and other affections due to cold.

Blisters and Abrasions.—Blisters are more likely to occur in those with tender skin; hence they are common among troops in training or in those who do not keep their feet clean, particularly if there is a tendency to sweaty feet. They are usually caused by the rubbing of an improper shoe, that is, by one that is poorly shaped, too small or too large, or by a shoe that has not been properly cared for, in that the leather has been allowed to become wrinkled and hardened through lack of proper attention to drying and oiling.

The treatment of a blister requires first of all, therefore, the removal of its cause; hence the foot must be inspected to see if proper cleanliness is being maintained, and the shoe and stocking examined for wrinkles and other defects. The blister itself should be: (a) touched with tincture of iodine, $3\frac{1}{2}$ per cent, (b) pricked with a needle which has first been sterilized (made surgically clean) in a match, or other flame; the fluid allowed to run out and the skin dried, (c) then covered with a piece of zinc oxide plaster, or, if this is not available with sterile (surgically clean) vaseline or zinc oxide ointment, and covered with a single piece of gauze bandage.

The foot should then be examined for any other points of beginning trouble, and if any are found they should be covered with a piece of zinc oxide plaster, if this is not available they should be well powdered. Abrasions which are raw places, due to the skin having been torn off from a blister, are best treated by covering them with some sterile ointment such as those just mentioned and bandaging the foot with a single layer of bandage. The foot should be powdered lightly before putting on the stocking.

Trench Foot, Chilblains and Other Forms of Frost-bite.—In cold weather frost-bite in its various forms must be guarded against. The conditions in trench warfare make this of particular importance on account of the long exposure to wet and cold and the inactivity due to the confined space and constant standing.

Trench foot, which is apparently similar to frost-bite, is the most serious of these affections. Since the care required in its prevention applies equally well to the others, it alone will be described.

Trench foot is caused by long exposure to both cold and wet at the same time. It is favored by anything which interferes with the free flow of the blood in the feet (as constriction by tight boots or tight laced shoes or leggings and inactivity) or by anything which weakens the flow of blood generally throughout the body (as fatigue, lack of proper food, etc.).

"Onset. Trench foot begins gradually. The first thing noticed is that the feet begin to get colder and colder, until all feeling is finally lost. Except for the discomfort due to the cold feet, pain is not felt at first; after a time the feet begin to swell, and then pain begins to be felt usually about the ankles and sometimes extends into the calves, that is, the pain is felt in those parts where the flow of the blood, while interfered with, was not stopped altogether."

Preventive Measures.—Trench foot may be avoided by proper attention to the foot and its coverings. This, however, requires systematic and painstaking care of the feet before going on duty, while in the trenches and after leaving them.

Before going on duty the feet should be washed clean, rubbed until thoroughly dry and then well greased with whatever grease or ointment is provided for this purpose. Two pair of clean, properly fitted socks should be put on. The shoes or boots worn should be roomy and, if laced, should be laced loosely; whatever coverings are worn around the legs should also be loose.

It is of utmost importance that every effort be made to fix the

trenches so that it will not be necessary to stand in water, snow or mud; standing in mud is, however, said to be not so dangerous as in water because a little heat is retained about the feet by the mud. The flow of blood in the feet should be kept as active as possible by moving around, working the toes inside the shoes and stamping the feet frequently. Leggings shrink when they become wet, so if they are worn they must be removed and re-applied more loosely. While in the trenches the shoes or boots should be removed at least once a day, and the care of the foot carried out as was done when preparing to enter the trench. When the shoes are off, the feet should be exercised vigorously in all directions. Warm food and drink are necessary in preventing fatigue and general depression, and these are now furnished, when possible, twice a day.

It is also necessary to be careful to protect the body generally from wet and cold as much as possible; hence when it rains a water-proof coat should be worn, if one can be obtained.

On returning from the trenches the feet should be again cared for as before, dry stockings and shoes put on, and the wet foot coverings properly cared for.

(NOTE.—For a more extensive consideration of the various points mentioned in this article, the reader is referred to the official "Manual of Military Orthopedic Surgery" of the Army and to Colonel Munson's work on "The Soldier's Foot and the Military Shoe.")



PAGES FROM THE DIARY OF A FRENCH ARTILLERYMAN¹

TRANSLATION AND COMMENTARY BY LIEUTENANT GEORGE NESTLER
TRICOCHE, FORMERLY OF THE FRENCH ARTILLERY

MODERN trench warfare has so modified the tactics of field artillery that one is prone to consider somewhat archaic anything pertaining to operations of batteries "in the open," like those described in the following notes. We need a mental effort to realize that the present war of position, for field batteries, is not likely to remain the only method of fighting; even now, once in a while, it is necessary to revert to the old tactics. The English, for instance, have thus made a good use of their horse batteries, especially to increase the efficiency of certain fire. The diary from which these extracts are taken was written by a private who subsequently became a noncommissioned officer. But this artillery driver, Mr. Paul Lintier, in civil life was a talented novelist and newspaper man. His style, which, of course, can only be appreciated in the original, is unusually forcible and realistic. The notes he hurriedly jotted down by the bivouac fire, or while resting with combat train, were gathered into a book under the title, "*Avec une Batterie de 75. Ma Pièce*,"² Mr. Lintier, then a chief of section, was killed by a German shrapnel while correcting the proofs of his diary. This book of nearly 300 pages was awarded the Montyon Prize by the French Academy and is today in its 37th edition. Although not rich in purely technical details, "*Ma Pièce*" is one of the most interesting contributions to the war literature, because it affords to the reader a unique insight into the daily life of the French artilleryman.

DURING THE MOBLIZATION

The first pages of the diary are naturally reflecting the emotion and anxiety of the first days of mobilization, with the conflicting reports, which come from nowhere in particular, and spread like wild-fire, only to be succeeded by other news, just as unreliable, but nevertheless disquieting.

¹From *The Field Artillery Journal*, July-September, 1917.

²Plon-Nourrit et Cie., Paris.

We are reluctantly compelled, by lack of space, to leave out the greater part of this first chapter.

"SUNDAY, August 2, 1914.

. . . "Above all, the 'Great Event' breaks the monotony of our barrack life. One could say that a strange state of moral blindness prevents us from foreseeing anything which does not pertain to the preparation of our departure. This indifference surprises me; yet I, too, partake of it.

"Shall we call this decision courage? Are we even believing that war is to come? I am not quite sure. One cannot realize what that war could be. One is unable to gauge the horror of it. So it causes us no anxiety. . . .

"MONDAY, August 3.

"We do not know, as yet, this morning, whether war has been declared or not . . . They say the Germans, yesterday, crossed our frontier in three places; but, again, yesterday, they were positive that our men, in spite of their officers' orders, had entered Germany. They say—they say at the same time the most sensible and the most foolish things . . .

"We are waiting for news, and when we receive it, we shrug our shoulders. . . .

. . . "The personnel of a field artillery section consists of six drivers, six cannoneers, one corporal, and one sergeant, the latter being chief of section. But our piece—the first one of the eleventh battery—has, besides, a chief of platoon,³ one fire corporal,⁴ one bugler, and the captain's 'striker' with his two horses; altogether, eighteen men and nineteen horses. Out of these eighteen men, seventeen belong to the active army. For nearly one year they have led the same life; every day they have drilled together. So this section has its existence proper; it is a society in a nutshell, with its likes and dislikes, its own habits and by-laws. . . ."

ON THE WAY TO THE FRONT

The author, being detailed as "stable guard," is in charge of eight horses in a box car. He prefers his lot to that of the men who are crowded, on hard wooden benches, into freight cars, during these hot August days.

"This is the best place for such a trip. Lying upon a heap of hay

³A senior sergeant. (Translator.)

⁴Who is also assistant to the supply sergeant. (Translator.)

which I have carefully shaken, I slept, with my head resting squarely between the padded twin cushions of a saddle. . . ."

To understand this, the American reader must remember that, in France, horses in box cars are generally disposed in two rows of four, facing each other. In the space between these two rows, opposite the car's door, there is plenty of room for some forage, the eight saddles and the stable guard.

"Where are we going? Our officers themselves do not know; the locomotive engineer says he does not know either; he shall receive his orders on the way.

"The Territorials, who guard the railroad line, greet us as we are rolling by, lifting their rifles. We answer by waving our whips. 'Good day, old chaps!' we shout.

" 'Good luck, boys!' "

After a thirty-hour trip the battery detrains the evening of the 9th near Verdun. It marches then through the woods till midnight, and parks in a meadow.

"We have to lie down upon the bare ground. Drivers and cannoneers vie with one another in snatching the horses' blankets. Most men stretch themselves under the caissons and gun carriages, where the dampness of the night is less felt. . . ."

AT THE FRONT

Until the 14th of August, the eleventh battery of the 44th Field Artillery moves to and fro, expecting in vain, every day, to receive its baptism of fire. On the 14th the battery is sent to Azannes, where it must spend the night.

"On the road move our carriages; automobiles are full of superior officers; cavalry platoons escort gold-braided staff officers; supply wagons are raising clouds of dust that never disappear for a moment.

"Our dark uniforms turn gray in a few minutes.⁵ Our hair, eye-lashes, our fifteen-days-old beard retain the dust. The Parisian autobusses, transformed into meat wagons, which go ahead, give us, as they pass by, the finishing touch, by making us as white as the road itself.

" 'Reconnaissance!' "

" 'What's that?' "

⁵At that time the French Army was not yet supplied with its present blue-gray uniforms. Artillerymen were wearing a dark-blue blouse, dark-blue breeches with a scarlet stripe on the side, and a *kepi* of similar color. (Translator.)

"'Reconnaissance, I say. Pass the word!'

"The corporals repeat the order.

"Our captain says simply, as he is spurring his horse, 'We are going to fire.'

"The major, the three captains of the battalion, the buglers, and the fire corporals gather into a detail that gallops off at once. We cross Azannes, where we were supposed to have our *cantonnement*. It is a miserable-looking place, with low houses surrounded with manure heaps. One sees that, here, man never dared to undertake anything. But it is not because the soil is poor: the perpetual fear of a war, of a German invasion, has frozen, so to speak, the spirit of enterprise. . . .

"Farther on, as we come out of the woods, our batteries, which were in column of march, go front into line. . . .

"Where is the enemy? What is the real value of these positions and from where may they be discovered? Does the infantry support us? We feel feverish, nervous. In a meadow, near a field of oats, we unlimber. The limbers go to hide themselves in the woods. Without a minute's delay, Brejard⁶ orders us to dig out, with our pick-axes, some clods of earth with which to increase the protection afforded to cannoneers by the shields.

Our horizon consists only of motionless oats, already ripe, from which rises, under the brilliant sunshine, a hot, metallic glare. The pointer finds neither a tree, nor even a sheaf, to use as an auxiliary aiming point. It is necessary to stick a spade in front of the gun. Had I not seen the batteries take their position, I never should have realized what a force of artillery was awaiting the enemy in these fields—over sixty pieces. With the exception of the observation ladders, upon which the different captains look like big insects on the top of a blade of grass, we do not see anything. . . ."

But it is a false alarm; and the battery, without firing a shot, is sent back to its *contonments*, near Verdun. The whole Army Corps moves slowly towards the Belgian frontier, crossing the latter on the 21st of August.

⁶A senior sergeant, chief of the first platoon of the eleventh battery. In the present four-gun battery of the French Army, one platoon (two *pieces*) is commanded by the *adjudant* (a sort of sergeant major); the other by the senior sergeant. The lieutenant is in charge of the firing battery while the captain is at the observing station. The first sergeant is in charge of the limbers. The *échelon*—combat train—is, as a rule, commanded by a Reserve lieutenant. (Translator.)

THE BAPTISM OF FIRE

"SATURDAY, August 22.

. . . "On the road that stretches very straight between a double row of trees, the twelve batteries of my regiment, followed by their combat train, form a dark, interminable line, apparently motionless.⁷ The captain commands:

"*'Dispositions de combat!'*

"The cannoneers, lying on the grass, jump up. They remove the muzzle and breech coverings which protect the guns against dust, put in place the sights, and examine the working of the aiming apparatus. . . ."

Several miles ahead, a battle is raging. For the first time, the author and his commanders see hostile shells exploding in the distance.

. . . "It seems to me that a feeling of anxiety is growing on me, as if the circulation of my blood were slackening. I am not afraid. . . . This state of unrest causes us all to look sober, and fastens our eyes upon that spot which is constantly struck by the German shells . . . Among men, conversation slackens. One is waiting for I do not know what—a shell's burst, the arrival of orders. . . . Inwardly, I excuse myself for being anxious. A baptism of fire is always disquieting. Immobility, in column, on the road, is enervating. Should our foe increase his range, he would hit us while we are absolutely defenseless."

The noise of the battle increases. Finally the battery moves on.

. . . "Where are we going? Ye gods! Where *are* we going? . . . Towards that crest, every acre of which has been, for two hours, riddled with German shots? Why are they leading us thither? Are there not, on yonder hills, many other excellent positions? We are going to be slaughtered! And the column, at a walk, advances towards the sloping field, struck every minute by the hostile shells.

. . . "Anxiety almost chokes me. Yet, I reason with myself. I clearly understand that the hour has come to sacrifice my life. We

⁷This regiment consists of twelve batteries (four battalions) because it is "Corps Artillery." Divisional regiments have, in principle, three battalions of three batteries each. The fact that the 44th Field Artillery is the corps regiment of the Fourth Army Corps explains why it did not participate in more engagements during the first phase of operations. During August, 1914, there was on that particular front much scattered fighting, but very few affairs long or important enough to call into action all the Corps Artillery regiments of the different Army Corps. (Translator.)

shall go on; we shall all go there; but we shall never come down from these hills. That's all. . . .

"We are going ahead, still at a walk. The drivers, who had dismounted, walk at the head of their teams. . . ."

At last, that dreaded first shell is coming, causing the air to vibrate—and the vibrations seem to extend to the flesh, to the nerves, to the very marrow of the bones.

. . . "The cannoneers are squatting close to the caissons' wheels. The drivers take shelter behind the horses. One is waiting for the burst. One—two—three seconds. Hours! I bend my back; I tremble. I feel that an instinctive desire of running away is surging from my whole being. . . . Here it comes! It seems that lightning struck at my feet. . . .

"And now the column halts here, in a potato field so ploughed down by the German fire that one can hardly find a passage for our guns between the holes opened by the shells. . . ."

In spite of this apparently terrific fire, only one man, a driver, is slightly wounded. The battery unlimbers finally; but the captain fails to find any target, on account of a mist which hangs over the hostile positions. German shells fall everywhere, but they are not aimed at the battalion. The latter remains idle while columns of infantry, in retreat, pass by. The situation looks serious.

. . . "Our officers are consulting together. We hear the major repeat over and over again: 'But what could *we* do? No orders. . . . No orders!'

And still we wait. The tall lieutenant has taken his revolver out of the holster. Cannoneers are cocking their carbines.⁸ The hostile artillery has become silent, perhaps because it fears to hit its advancing infantry. At any moment the enemy may appear on the crest. . . . At last: 'Limber up!' This maneuver is quickly done."

The battery, without firing a gun, has had five or six men wounded; what is worse, a fragment of high-explosive shell broke open the brake of a gun carriage, thus putting the piece out of commission. One follows the retreat, under the fire of hostile machine guns. A horse falls; a bullet passes through a cannoneer's thigh, but the man walks on by the side of the caisson.

⁸French cannoneers are still armed with a carbine, 1892 model, which has a magazine for three cartridges. This weapon is far less effective than the revolver of the mounted men. (Translator.)

"In a dale, well sheltered from the bullets, a meadow forms a clearing in the woods. There our three batteries park, while waiting for orders. . . . But the longer we wait, the fewer chances we have to escape without more harm.

"The major is waiting for orders. His speech is brief, his gestures are jerky. This betrays a nervousness which we know very well. 'He is cracking hazelnuts,' as the saying goes among us, in the battalion. He had sent out a corporal to get some tidings. But, at this time, where is it possible to find the headquarters? The army is in full retreat. . . ."⁹

Again the battalion moves on. To save time, it goes across country, forcing its way with axe and pick through fences and other obstacles. It reaches finally a highway.

"The road to Tellancourt is like a river. In the midst of the human waves made by this multitude in retreat we must make our way by force. Beside the artillery column are infantry battalions which has retained some organization. Right and left, tossed like pieces of cork on a swift current, carried by the eddy, now thrown into the ditch, then dragged by the torrent, remnants of units crowd the edges of the road: there are wounded men, men who are footsore, exhausted men without arms or haversacks who have gone astray. . . . Some cling to our carriages and hoist themselves up to the caissons' chests. . . . The middle of the road is strewn with shoes, mess kits, regulation kettles flattened by the carriages' wheels and the horses' hoofs, pieces of clothing, cartridge belts . . . kepis, broken rifles. That brings tears to our eyes. In spite of myself, I am thinking of the roads followed in August, 1870, by our retreating forces, after Wissembourg, after Forbach. Yet, for a month, they were talking of nothing but victories . . . and at the first battle, *our* army, *our own* army is beaten. With some surprise, I realize that I have been present at a defeat. . . ."

Day after day, the battalion wanders to and fro, always alarmed in the early morning, starting in a hurry for nowhere in particular, stopping for hours in some field or perhaps unlimbering without firing a shot. The men seldom get a warm meal; they never undress. The horses, at night, are unhitched and unbridled; but they remain

⁹Notwithstanding the retreating movement, there seems to be no excuse for the lack of communication between the Army Corps' headquarters, or at least the Artillery Brigade's headquarters, and the Corps Artillery regiment. (Translator.)

saddled and harnessed. On the 23d of August, a Sunday, while the church bells of a neighboring village are calling people to mass, the men count themselves. Many are missing. The whole combat train has disappeared.

"In a circle around the captain we reorganize the sections. The battery has only three guns left; one must send to the rear the one whose brake had been broken by a shell.

"How tired I am! As soon as I remain motionless, I fall asleep. My master pointer, Hutin, opens a box of *singe* for us both:¹⁰

"Are you hungry, Lintier?"

"Not very; yet I have not eaten since day before yesterday."

"Same here. . . ."

"In the evening we go back to Tornay for the night. That shows that there is nothing threatening in the air. . . . We parted from our bivouac. It is hard work! The guns are parked twenty metres apart; picket lines are fastened between the wheels of two guns. When the horses are attached, the harness is placed upon the pole of the limber. . . ."

The battery is expecting at last a quiet, restful night. But the bivouac is soon disturbed by the appearance of a hostile aeroplane. The cannoneers, half undressed, seize their carbines and shoot at the aircraft, of course, without any result. Then, as the drivers are watering the horses, an orderly arrives at a gallop. We must move on at once.

"Is it a surprise? We harness the teams feverishly, and, before we have time to button our blouses, the first carriage is leaving the park.

"Forward march! At a trot!"

"We were obliged to throw the oat sacks, still half filled, pell-mell upon the gun carriages; while running along we rope them lest they should fall off.

"Then, half dressed, we jump upon the caissons and limbers as the battery is trotting on that rough road. . . ."

On August 25, near Marville, the battery fires its first shot—seventeen days after leaving its garrison.

"Attention! Pointers, at my side!"

"The men run up to the captain's position.

—"In front of us, a tree looking like a paint brush."

¹⁰In military slang, *singe* (monkey) means canned beef. (Translator.)

—" 'Seen,' answer the pointers.

—"Aiming point, that tree. *Plateau, O. Tambour 150.* . . .

Each pointer runs back to his post and lays his gun. The breech block closes. . . . The pointer raises his arm:

" 'Ready!'

"The chief of section commands:

" 'For the first shot!'

"Fire"! . . . and the firing goes on, quickly, but without any jerking. The men's movements are coordinate, precise, brief. No one speaks. Gestures are sufficient to indicate what is to be done. One hears only the changes of range given out by the captain, and repeated by the chiefs of section. . . .

"The cannoneers stretch themselves on the grass. Some begin to smoke."

But soon that bane of the artilleryman, a hostile aeroplane, is seen soaring above the guns.

. . . "Immediately, German howitzers open fire upon the crests by us and upon a wood near by. It is time to change position. . . ."

That is what the battalion does before the enemy has the exact range. It seems that the German aviators are becoming more active, for on the 30th of August the battery's position is again marked by a hostile aircraft. It is worth noticing that, already in 1914, it was vaguely felt by the French soldiers that their foe was getting temporarily the mastery of the air—a fact which is officially admitted in August, 1917!

. . . "The enemy has succeeded in perfecting the 'aerial arm' so that he uses it as a virtuoso. Unfortunately our '75' is unable to reach these swift 'hawks.' The gun proper is not mobile enough on its carriage. One has to dig a ditch to sink the trail's spade; and by the time this is done, the bird is far away.

"The avion has marked, with a star, the position of one of our batteries, placed upon a hill near the river. But, at once, this battery went somewhere else, unknown to the enemy.

"Just now, hostile shells fall, very thick, upon the crest that the guns have left—enormous shells which, when they burst, shake the ground for miles around. . . . 'These must be their famous 22-cm. shell,' the captain explains to us. . . ."

Much to the men's sorrow, the Fourth Army Corps continues to

retreat. The weather is bad; the fatigue extreme. Even a full day's rest, with abundant food, does not improve things.

. . . "We are leaving our camp in the night. We should feel somewhat rested were we not all suffering from diarrhoea. Nothing is more exhausting; nothing like it to cause a fellow to lose flesh in a hurry! The surgeon is out of bismuth and paragoric. Our only resource is to chew blackthorn bark. . . .

"The horses are still more tired than the men. Many of them have been slightly wounded in the battles of Monday and Tuesday. Their wounds are suppurating. Most of them are not cared for at all; and this is not so bad, because a few have to put up with the non-sensical remedies devised by their drivers. One of the latter is urinating upon his horse's pasterns which had been cut open by a fragment of shell. Almost all horses are limping, for they have been hurt by the tethers or by kicks received at night, while the stable guards, utterly exhausted, were slumbering.

"Seldom unhitched, never out of harness, they have many large sores (caused mostly by the cruppers) and which, all day long, are covered with gadflies. The cavalry is pitiful, and their horses are weakened, moreover, like the men, by a continual diarrhoea.

On the 4th of September the battery entrains to go to the vicinity of Paris. What a contrast with the departure for the front! Then, man and beast were fresh, healthy, ready for anything; now, worn out, emaciated, almost ruined by disease, lack of sleep, and incessant marching, they move as if in a trance.

"At dusk we entrain. Kerosene lanterns, placed at great intervals, light more or less the long platform, covered with straw. Horses, with lowered head, brutalized with fatigue, allow us, without any resistance, to place them in the cars. . . . Men, thirty in each freight car, arrange themselves for the night; some stretch themselves on the benches, some lie on the floor. Great coats are used for pillows; arms are piled up in the car's corners. And, as the sun is setting, the train pulls out slowly, along the now deserted platform. . . ."

The battery detrains at Pantin, a suburb of Paris. Although the report of guns is heard at intervals, life seems absolutely normal there. Cafés are full of people; gayly attired Parisians crowd the street, taking their "constitutional" on that bright sunny Sunday. But that is only a vision. At once the battery starts on an interminable march, amidst clouds of dust. During the long periods of trotting,

the men on the caissons, constantly jolted and jerked, are almost too miserable to think, as diarrhoea still tortures them. But, at last, one is going *forward*; the odious bugbear of 'Retreat' is vanishing from the men's minds! On September 7 the battery goes into action, playing its part in the famous operation of the Marne.

... "Only a thin hedge of brambles and underbrush hides us. From several points, on the horizon, our battery is certainly visible. It is not a good position; but there is no better one at hand. On a private road, near No. 1 gun, our officers have established their observing station. . . . We have heaped sheaves upon our guns and caissons. Yellow, on the background of that yellow field, they may deceive the hostile observer. Then, too, straw is a pretty good protection against fragments of shells.

"At once, as thoughtless as the 'men' moved by players at a game of chess, and with that fatalism natural to men who have been risking their lives for a month, we lie down to sleep in the sun.

"To your pieces!"

"Something dark, artillery perhaps, is moving yonder, at the foot of wooded hills, more than 5,000 metres away. We begin to fire. Right and left, and even in front of us, batteries of '75' are going into action one by one. . . ."

"Very shortly we cease firing. The enemy did not answer. But as soon as the breeze clears away the smoke, hostile howitzers open up—three large shells fall together, very accurately, into the hedge in front of the guns.

—"They have seen the flashes of our pieces," says the chief of platoon. —"And they have got the right direction, too," remarks Hutin, the master pointer. "It is the 150-mm. gun, all right!" Unluckily, just now, a *caisson de ravitaillement* is coming up from the combat train, at a trot. It is commanded by a corporal, on a big white mare.

"We shout: 'Dismount!' 'Dismount; you will be killed!'

"The drivers do not seem to hear.

"'Dismount, you . . . fools! At a walk! At a walk!'

"But already they have unlimbered the filled caisson, limbered up the empty one; and there they go, at a gallop, in spite of our shouts!

... "

... Shells continue to fall here and there. The battalion does not answer the fire, for it is clearly outranged by the German heavy

artillery. A few cannoneers fall. Yet the order to limber up does not come.

. . . "Hutin, the pointer, seated at his post on the gun-carriage, shouts to us:

"But I see them firing, *les bougres!* I see them, far away, yonder, over 9,000 metres! I saw the flash. Here comes the shell! Here it comes! Look out! . . ."

. . . "I hear the captain shouting to the *adjudant*:

"Daumain, have everybody take shelter to the right. The Major's order. Useless to get killed so long as one does not fire!" We call one another; we get out of the smoke zone; we try to step away from the area searched by the howitzers. But the enemy's fire follows us on that field where we are running, scattered, bending our backs, as if that should protect us. . . ."

"WEDNESDAY, September 9.

"In a field near Sennevières, while waiting, we are making our coffee. . . . To the northeast and to the east, guns are thundering away, like yesterday, incessantly. . . ."

At one time it seems certain that the left wing of the French is weakening. The cannoneers, always dreading a retreat, become anxious:

. . . "Is the enemy to flank us again? We question the captain:

"What does that mean, *mon capitaine?*"

—"I do not know more than you do, my friends. I have only to obey orders. I place myself where I am told to do so. That's all!"

"Deprez¹¹ insists:

"But they are again turning our left wing!"

"The captain's face betrays, this time, some anxiety.

"Yes," he says, "they are shelling, today, woods they were not shelling yesterday. Yet, that proves, at least, that they have not as yet reached this spot. Perhaps, on the contrary, they are threatened by us in that direction. . . . What do we know about all this? And then, should we be outflanked, we are not alone here. We shall face them."

"He lays a stress on this last phrase by looking squarely at us with those bright, proud eyes of his. He repeats:

"We shall face them?"

¹¹A corporal. (Translator.)

"'For sure, captain!"

"Coffee is hot. The captain gets out of his pocket his aluminum cup and dips it into the black, steaming liquid. All the men of the section, standing by his side, cup in hand, are waiting. When he has served himself, they lean, one by one, towards the kettle, to get their ration. We are silent. We are enjoying the coffee.

"Then the cook's voice is heard:

——" 'There is some *rab*!' ¹²

——" 'How much?' asks the captain, anxious not to slight anyone.

——" 'Each one, a good half cup.'

"The captain helps himself, then the men follow. And, as there still remains a little coffee mixed up with grounds—some '*rab* of *rab*'— the process begins again." . . .

We end the quotations here, on that military "family picture" truly characteristic of French Army life. The book is well worth reading in its integrity, for, leaving out the descriptive part of it, it is possible to draw from its perusal some technical conclusions which might be useful. For the benefit of those, among our readers, who will not be able to read "*Ma Pièce*" in the original, we shall try to condense these conclusions into a few remarks.

Although the book tells only of the experiences of the members of one particular battery, it is obvious that many things which befell this battery befell also the battalion and the whole corps regiment of the Fourth Army Corps, as the twelve batteries of that regiment were generally together. Therefore it is possible to generalize to a larger extent than one should expect at first sight.

1. It seems that communications between batteries and headquarters were often defective. Throughout the book, batteries and battalions are seen awaiting orders, which either come very late, or even do not come at all. The result was, in many instances, that the batteries began their retreat *too late*, when they had no regular support and the enemy was too near. Men and horses suffered thus, unnecessarily, from rifle and machine-gun fire.

Sometimes material was lost: the tenth battery of the 44th, for example, had to sacrifice all its caissons in order to save its guns, solely because, during its retreat, it had to take a road which had not been previously reconnoitred. Something similar, if not worse,

¹²Abbreviation for *rabiot*, an army slang term for "remnant."

seems to have occurred, on another occasion, to divisional batteries.

Again, we see the *échelon*—the combat train—cut off from its firing battery—a fact that which can be ascribed only to a strange neglect of the fundamental rules of field artillery tactics.

2. During the two months covered by the diary, early morning alarms occur nearly every day, compelling the batteries to leave the cantonments in a state of confusion and, which is worse, without any possibility of giving the men hot coffee or watering the horses. A great many of the ailments that befell men and beasts in the latter part of August, during the rainy weather, can be ascribed to this condition of things. Alarms will happen in a campaign; but it is hardly possible that they should become a rule, unless there is something wrong at headquarters. What happened near Verdun and in Belgium in August-September, 1914, reminds one very forcibly of the mishaps of the War of 1870-71.

But how could one wonder at this when, even during the annual maneuvers, with all the work carefully planned ahead, long, useless waits and groundless alarms occurred so often? In the very same cantonments occupied early in August, 1914, by the eleventh battery of the 44th regiment, my own battery, maneuvering years ago with the famous Iron Division, had to hitch up sometimes at 2 a. m. and remain at the park until 7, when we departed breakfastless and already drenched by the rain; the origin of such orders could never be ascertained.

3. Battery or battalion commanders often appear to feel some anxiety as regards the safety of their unit. To be sure, during the night, the corps artillery had an infantry *soutien*; but certainly no adequate protection during the day. A battery commander who, in action, is constantly concerned about the guns' safety cannot give to the firing what the latter requires—undivided attention.

4. The lack of field (rolling) kitchens, at the beginning of the war, caused by the unreasonable opposition of officials—and officers—belonging to the old school, caused the batteries to fight or march on an empty stomach, and even to eat *raw meat*. In that respect, French field artillery was behind the similar units of a little militia country, Switzerland.

5. A large proportion of wounded cannoneers or drivers were hit on the head. Many of these wounds, which were slight (but not infrequently caused blood poisoning), would have been avoided, or

their seriousness greatly reduced, had the arm been supplied with helmets, from the beginning. But, although such headgear had been asked for since the early "eighties," again the "stand-pat" spirit of some War Department officials prevented for years the change that Marshal Joffre effected in the twinkling of an eye. The only attempt at a better head protection was an experiment made, a few years before the war, with a helmet which was issued to two horse batteries of the Paris garrison. That headwear, however, was intended as a protection against sabre thrusts. The idea that a helmet could be efficient against fragments of shell or bullets was generally ridiculed. Experience has conclusively shown, during this war, that many small fragments or shrapnel balls which reach a battery have not sufficient remaining velocity to cause any serious harm. That is why gun or caisson shields are more effective than many an artilleryman thought before this war. The number of artillery helmets *deformed*, but not pierced by hostile projectiles, is an eloquent testimony of the usefulness of this adjunct to the uniform.

6. As regards the morale of the men, this diary, like all other works of a similar nature written during the campaign, shows conclusively that artillerymen accustom themselves to the hostile fire much more quickly than is generally expected by officers who have not yet been present at a battle. It must be remembered that artillery, unlike the infantry, is exposed, or at least should be exposed, only to hostile shells, and not *also* to the fire of rifle and machine guns.

It does not take long for the men to realize that, terrible as the effects of bursting shells may be, they are less formidable than they look—especially in newspaper reports. The remaining velocity of shrapnel balls or fragments, when the latter reach the guns, is often, *in fact*, for different reasons, much smaller than it ought to be *theoretically*. Besides, the heavy howitzer projectiles, so destructive when they "fall plump" upon a gun's crew or a group of limbers, for instance, are by no means as "black" as they are painted. In the particular battery mentioned in Mr. Lintier's book, the cannoneers realized very quickly that the steeper the angle of fall, the less the cone of dispersion is to be dreaded, especially upon a light soil. Says the author:

. . . "The (heavy) shell, by falling almost perpendicularly on the soft ground, sinks very deep. It displaces, in bursting, an enormous amount of earth. But many fragments of steel are lost in

the depth of the hole, and the murderous 'gerbe'¹³ is so much the more reduced. This is borne out by facts. As we walked away from the little crater, the tall *topinambours'* stalks¹⁴ are cut higher and higher from the ground. Twelve steps away from the hole, the fragments have struck only the top of the highest stalks. Therefore a man, lying down very near the point of burst, would probably not have been hit. Farther, a circular zone has been entirely spared. Farther still, here and there, fragments, when falling back,¹⁵ have knocked down leaves and small limbs of trees; and, in that area, one would run as much risk standing near the guns as lying flat on the ground. . . ."

And the author concludes with that remark which deserves attention: "The shell, studied in that way, loses much of its moral effect."

A mere perusal of the diary shows clearly that the soldiers were haunted by the "ghost of 1870." The slightest movement of troops backwards causes an anxiety which is absolutely natural. The word "treason" is on the soldiers' lips, but it is gratifying to notice, in these trying circumstances, the coolness and good sense of the *cadres*. Yet, in spite of the grumbling, drivers and cannoneers remain perfectly in the officers' hands—first, because these officers have known how to win their men's confidence; second, because, by its very organization, artillery is the most "solid" of all arms. As the author aptly remarks:

"The infantryman, the cavalryman, the engineer are units by themselves. For us, the unit is the gun crew. These seven men are the organs, closely bound together (and dependent on one another) of a being to which they impart life—the piece in action.

"This chaining of the seven men together and of each of them to the gun makes any weakness more conspicuous, more important, and sets forth more forcibly the shame which arises from it. Then, in this joint responsibility, the effluvia which create psychological contagion, develop themselves easily; one or two cannoneers faithful, cool headed, impressed with a greater sense of duty, are often all that is necessary to give courage to a whole section. . . ."

¹³Cone of dispersion. (Translator.)

¹⁴Jerusalem artichokes. The howitzer shell in question had fallen in the middle of such a field. (Translator.)

¹⁵Therefore after the velocity caused by the bursting charge has been spent. (Translator.)

THE USE OF THE MIL SCALE IN MILITARY MAPPING

FIRST LIEUTENANT L. R. LONG, U. S. M. C.

The Bausch and Lomb six-power stereo prism binocular glass.

—This glass is equipped with individual focusing attachment, and on the hinge separating the optical axes of the two eyepieces is a graduation in millimeters giving the distance between these two axes. The left half of the glass is equipped with two scales set at right angles to each other. The vertical one, known as the corrector scale, is used chiefly in problems of firing with an auxiliary aiming point, and the horizontal one, called the *mil scale*, in the measurement of vertical and horizontal "fronts."

2. *The mil scale.*—The principle of the mil scale is very simple. Its graduations perform the function of cross-hairs in a transit or level when used with a stadia rod. With the transit any two adjacent cross-hairs subtend 1 foot on the stadia rod when the rod is placed 100 feet away. In the mil scale, the mil, a unit of angular measure equal to about 3 minutes of arc, whose tangent is $1/1000$ of the radius, subtends on the stadia rod a width of 1 yard when the rod is 1,000 yards away. This is equivalent to saying that 10 mils intercept on the rod 1 foot when the rod is 100 feet away, or that 5 mils intercept half a foot at 100 feet, 40 mils intercept 1 foot at 25 feet, etc.

While the mil scale appears as a horizontal line when the glass is used in the normal way, the scale may be seen as a vertical line when the glass is upended and the observer uses only the left or upper half.

In the combination of the mil scale and stadia rod it is necessary that the binoculars have a secure mount and that the rod be graduated so plainly that the relatively inferior telescope of the binoculars can show such graduations clearly. Under the best conditions the binocular telescope can never compete with the transit or level telescope.

3. *Instruments used in the mil scale method of mapping.*—In using the mil scale method the following instruments are necessary:

A plane table mounted on the infantry range finder tripod



FIG. 1



FIG. 2



FIG. 3

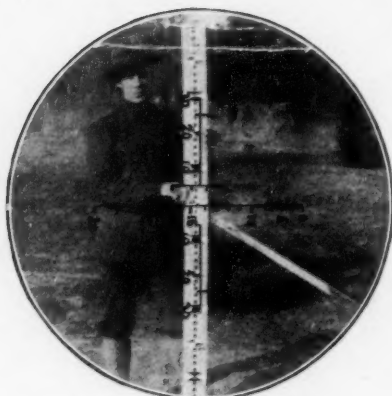


FIG. 4

(Bausch and Lomb 80 cm. base type; see Fig. 1). To the bottom of the drawing board is attached a perpendicular, rounded shaft fitting down into the tripod head. The board, after being oriented, may be secured by the clamp screw on the tripod.

A six foot stadia rod with a four foot sliding extension held in a dovetail groove on the back of the rod (see Fig. 2). Inasmuch as it is usually not practicable to take "shots" of more than 500 feet on the rod (viz., ten mils subtending five feet), the six foot length is ample. The extension in use, making a ten foot rod, is handy for contour work when used in conjunction with a Locke or Keuffel and Esser hand level. The rod, to be easily discernible, should be white, and its graduations bold and distinctive. In order that distances may be read to the nearest ten feet, graduations must be decimal, viz., in tenths of a foot. Numbers, being hard to read at 200 feet and over, are better left off.

A pair of binoculars with mil scale attachment, mounted vertically by means of a strap and board tapering at its bottom end to a rounded shaft, on the infantry range finder tripod (see Fig. 3). It will be found necessary to use separate tripods for the drawing board and binoculars, as these two instruments must be used in conjunction. The wooden shaft of course turns in the tripod head, and any mil scale graduation in the telescope may be brought into coincidence with a stadia rod graduation—and held there—by exerting a slight upward or downward pressure on the strap.

A compass, the circumference of which is graduated into degrees or half degrees, a small alidade with sighting vanes, a ruler graduated to tenths of an inch, a hard pencil, needle, protractor, eraser, etc.

The procedure is the same as when the big telescopic alidade is used. However, rather than attempt to read angles of elevation with the mil scale, it is easier to ascertain contour levels with the hand level and the stadia rod in extension, employing a known and constant H. I. (in this case the distance from the observer's eye to the ground of course).

When the board is oriented the rodman's direction is found with the alidade, and his distance read on the rod with the mil scale.

At a distance of fifty feet the mil scale will lie on the rod in exactly the relation as shown in Fig. 4. Sixty mils will subtend three feet, or ten mils five-tenths of a foot.

This method of mapping will be found to be a very satisfactory

medium between the frequently too inaccurate "military sketch" method, where little reliability can be placed on the exactitude of "map distances," and the precise and laborious transit or telescopic alidade method of the Geological Survey, wherein speed is sacrificed to unnecessary painstaking detail and exactness.

Appended hereto is a map of the trench system, U. S. M. C. Reservation, Quantico, Va. This map was made solely by the mil scale method, and there were no instruments used that are not discussed herein. The scale is 1 inch to 50 yards, a very handy one in maps covering an area similar to that of this one.

Its making took about a day and a half, and the error, when the line was "tied" to a triangulation point consisting of a stake at the north end of the 600 yard firing point on the rifle range, after a somewhat zigzag traverse of fore- and backsights of over 800 yards' width, was found to be less than 4 yards—and this despite the fact that no extraordinary attempts at precision were made.



MAP CONSTRUCTION

CAPTAIN C. E. MILLS, U. S. M. C.

THE readers of the MARINE CORPS GAZETTE may be interested in the methods employed in the construction of the accompanying map of Fairmount Park, Philadelphia, Penna. The work was done by the Fifth (engineer) Company, First Regiment.

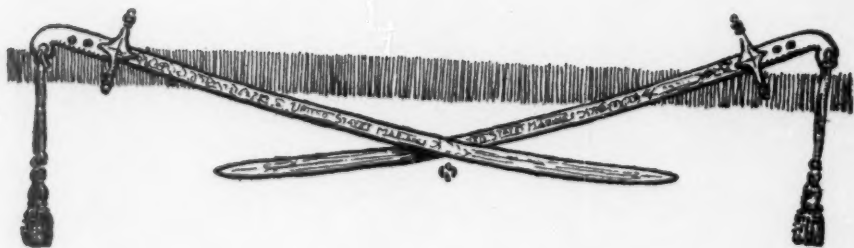
In the first instance, the map was made on a large scale for purposes of instruction. This enabled the perfection of numerous details which on a map of small scale would never have appeared. The use of the Park was permitted at all times and under any conditions, provided there was no defacing of Park property, therefore the erection of triangulation stations was out of the question, thus leaving only one alternative, that of traversing.

By a glance at the map one can readily pick up the first station, beneath the Girard Avenue Bridge—East River Side Drive, thence in a Northerly direction, finally “tying in” at Thirty-third Street. The same method was followed in all the other traverses. The courses were computed and all errors (there are always small ones creeping in) evenly distributed through the traverses. Prominent features were located by intersection and by offsets. The elevations were all made by level, the vertical angles were computed thereby making a thorough and additional check. Datum was assumed at the Girard Avenue Bridge as plus 20. The contour interval is ten feet. Authorized conventional signs were adhered to with the exception of peculiar features not figuring in military work, such as, guard boxes, etc., which are symbolized in the legend. All measurements were made by steel tape to the nearest tenth of a foot.

After locating all points both horizontally and vertically they were plotted on the main sheet, office record, and then transferred by tracing to the sketching boards and plane tables. The filling in was then done by the sketching parties, there being no chance of error as the control was always plotted accurately. This subdividing of the entire area permitted each man to go over every part of the work, thus demonstrating his ability in competition with all members of the detail. On the whole the method was a great success, the natural accidents of the ground would be hard to find elsewhere in such a limited area, also the weather was continually varying from cold to warm and warm to cold.

After a few weeks of instruction the sketchers were thrown absolutely on their resources, and had to work out their own salvation, excepting, of course, that when a man became "stuck" he was given suggestions and help. In the opinion of the writer constantly giving a man help leads him to look for assistance at the most critical time and thus renders him useless to the organization.

The men were required to prepare their own meals, and the amount of physical exercise that they had during the day made the party a dirty, tired one, but altogether happy and enthusiastic. The return to quarters each evening brought no rest as the day's work was gone over carefully in the draughting room. This latter phase of the work was entirely optional and is merely cited to show the interest that was centered in the work. It was thus demonstrated that an almost incredible amount of work can be produced under the most trying conditions, when the appeal is made to the man's creative ability.



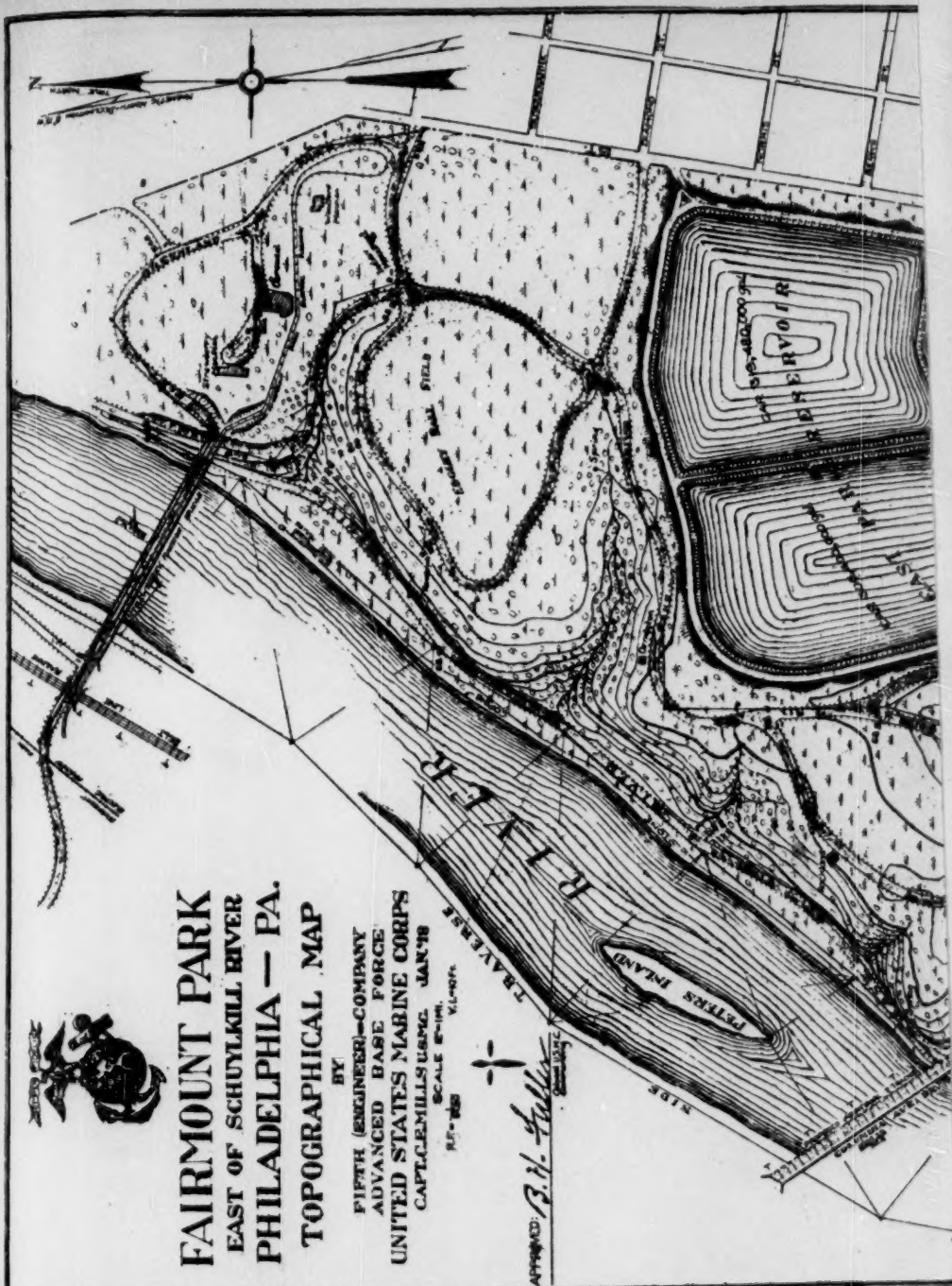


**FAIRMOUNT PARK
EAST OF SCHUYLKILL RIVER
PHILADELPHIA - PA.
TOPOGRAPHICAL MAP**

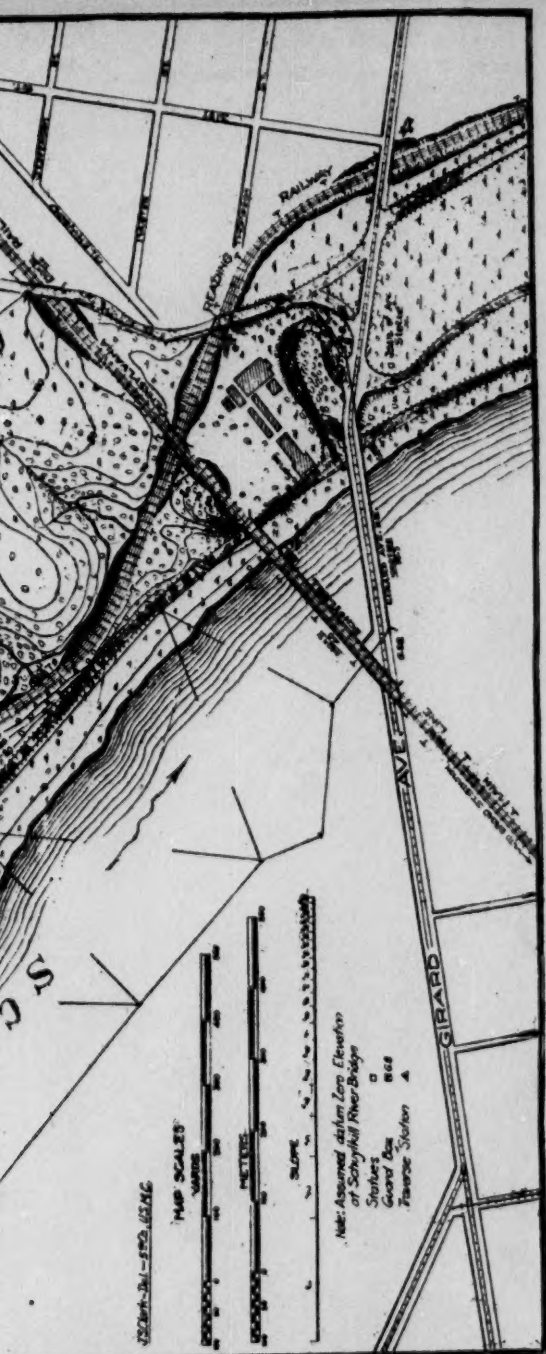
BY
FIFTH (ENGINEER)-COMPANY
ADVANCED BASE FORCE
UNITED STATES MARINE CORPS
CAPT J. M. LUSK, JAN '18

SCALE 8"-1 MI.
VI-1074

APPROVED: *B. H. Fuller*
Commanding Officer









1878

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ДОБРОЕ УЩЕЩЕ
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RECRUITING—PAST, PRESENT AND FUTURE

SERGEANT CLARENCE B. PROCTER, U. S. M. C.

THE further material increase in our ranks now pending and likely of passage during the present session of Congress brings us face to face with the greatest recruiting drive in the history of the Marine Corps. Having in view the fact that the burden of bringing our organization to its new maximum strength rests, to a certain extent, on the service at large, as well as the recruiting service, a brief resumé of the recruiting activities of the recent past, when we expanded from 10,000 to 32,000 men, as well as the methods used in filling the gaps in our fighting force of the long ago past, might prove of interest and benefit.

King Pharaoh of Egypt promised eight acres of land, tax free, to every able-bodied male subject who would enlist under his standard.

Emperor Frederick, father of Frederick the Great, sent kidnapers scouting his own and foreign countries for men to fill his grenadier regiments.

General George Washington promised "youth of spirit" \$60.00 a year to defend the United States.

Lord Nelson's burly Marines knocked staid citizens on the head and lugged them to a waiting frigate.

The Duke of Wellington's recruiting sergeants appeared in scarlet coats and plumes at the village public house and there bestowed the King's shilling that bound young men to service with the colors.

For several years immediately preceding the present war, brisk, young, military "advance agents" attracted recruits to the United States Marine Corps by business arguments in word and pamphlet which retrieved in practical emphasis what they lacked in warlike luster. They aimed to attract serious minded young fellows to take

(In view of the recommendation of the Navy Department that the Marine Corps be increased from 30,000 men to 50,000 men, the recruiting service of the Corps will be worked to its full capacity, and it becomes necessary that every officer and man in the Corps, as well as those in the recruiting service, do his utmost to obtain high-grade men. The field for operation is smaller than heretofore, owing to the selective draft law for the National Army, and officers and men may be aided by the following article in their attempt to obtain high-grade enlistments.—EDITOR.)

advantage of the opportunities our service offered for travel, mental and disciplinary training, physical development and pay, presenting a Marine Corps enlistment as "the one best bet" in the work-a-day industrial struggle.

And now—

The appeal is one entirely of a patriotic duty which able-bodied young men *owe* their country. Our field of possible prospects is depleted, the draft is a heavy embargo on our raw material—recruits, and other branches of the service are keener competitors than heretofore. It would seem that the only proper argument available, aside from the nature and special attractiveness of our service, is the one portrayed by our muchly advertised slogan "First to Fight."

The hard-headed and horny-handed recruiters of the olden days of "wooden ships and iron men," used no patriotic appeal or persuasion other than brawn and no logic other than the firm grip of the collar. Attractive literature, eye-catching posters, the columns of the press, or other up-to-date advertising innovations did not enter into their methods.

Then came an evolution toward more peaceful methods. Red-coated sergeants, preceded by drummer and bugler, with colors flying, held forth in public places or with their martial invasion waked the somnolent youth.

This picturesque method in its time was thrown into the discard, and, step by step, up the path of experience, the methods of recruiting have moved, until today, with the supreme test at our door, we are blessed with an up-to-the-minute, well equipped recruiting service, using fair and logical methods to secure volunteers, backed by a Corps of "satisfied customers," and a nation full of practical patriotism behind them.

By delving into the archives at Headquarters we learn that Mr. John Hall, of Charleston, S. C., who was commissioned a first lieutenant in the newly organized Marine Corps in August, 1798, was the premier recruiter of our organization. In the letter of acceptance of his appointment we find the following:

"In the meantime" (until the receipt of his commission)

"I shall engage as many men as I possibly can in this place. I will thank you to inform me what number of men it will be necessary for me to recruit in this state."

and further that he would dispense with "First Aids for the Un-

decided" in the form of Marines of the day dashing up the beach on Robinson Crusoe Isle, but that he would need

"buttons sufficient for the uniforms, as there are none to be procured in Charleston."

and to further fill the commandant's cup of joy, modestly suggests

"When I receive my commission I am in hopes it will be in my power to enlist a full company in this state, to effect which you may depend no pains shall be spared, as I feel particularly anxious to lend every aid in support of the Government under which I have the honor to serve."

That the Commandant, Major William W. Burrows, was well aware that he had secured a good recruiter in Mr. Hall is clearly indicated by his reply, in which he states:

"You may enlist as many men as you can and as many drummers and fifers as possible. . . . I shall be very happy to hear of your success."

An interesting sidelight on the methods later employed by Lieut. Hall, and possibly the real reason for his recruiting success, may be gleaned from his letter to the Commandant, dated Salem, Mass., October 7, 1799, which reads as follows:

"I have opened a rendezvous here, but have not yet been able to get a single recruit. I purpose this week to open a rendezvous in different parts of the country and make frolick, to draw the people together, which I think will have a good effect. There are some in jail whom I could get out by paying the sum of 12\$. Do you think I would be safe in advancing it? The county elections are held this week and a general review next, which I think will afford some recruits."

Although it would be somewhat of a surprise for an officer of the Marine Corps today to receive such an order, it was no unusual thing in the early eighteen hundreds for orders similar to the following to be issued:

"You have now been over two years on shore, and I am constrained therefore to detail you to command the guard for the Frigate *John Adams*. You will proceed by the morning stage to Alexandria and thence by the packet to York (now New York) where you will recruit your guard."

In an old letter book at Headquarters in Washington, marked 1804 to 1807, may be found several orders to officers similar to the

above. It was not at all strange for an officer to be called upon to find his own men. The Corps was recruited as needed. The only advertising medium was the fife and drum, and in every recruiting party we find a drummer and a fifer borne on the strength. Indeed, from this practice comes the phrase "to drum up," and the American name for the traveling salesman or "drummer." Recruiting methods of that day were crude, to say the very least. However, press-gang methods were never resorted to to fill the Corps, neither were drafted men ever taken.

The most recent recruiting campaign is without a doubt the greatest in our history and if it can be considered as a criterion, much may be expected in the campaign before us. We entered into the last campaign heavily handicapped, in that the country at large did not realize that the Marine Corps had a distinct organization and a separate recruiting service. To overcome this handicap it was necessary to emphasize our individuality, attracting public attention by wide display of general publicity matter and by special representation of the peculiar characteristics of Marine Corps service, which in its very nature appeals to the imagination and adventuresome spirit of youth.

The use of such slogans as "First to Fight," "Rally 'Round the Flag with U. S. Marines," "Spirit of 1917, Join the Marines," etc., was not braggadocio, but simply an epigrammatic presentation of the functions of our Corps. It seemed perfectly legitimate and appropriate in a campaign for recruits to mention the "firsts" in which our Corps has appeared, in presenting the claims of the Marine Corps upon public recognition. Called upon to recruit up to war strength in competition with the larger, better known branches of the service, we took the material at hand, *i. e.*, the colorful adventurous history of the Marine Corps and the characteristic nature of its services to the country, and endeavored, by presenting these features in the most attractive manner, and by the best approved and most modern methods of publicity, to perform the duty of filling our ranks expeditiously. That we took fair advantage of the unique character and history of the Marine Corps is not vainglory, and surely there has been no effort made to evoke invidious comparisons with our sister services. We presented the attractive features of the Marine Corps in the most effective manner possible, and with all the punch and driving power of modern publicity methods. This was not only natural but reasonable, and in accordance with the cardinal principle

of Marine Corps training,—in an emergency strike quickly and with every ounce of available energy. The proof of the pudding was in the eating—we got the men.

Probably the four greatest factors which made this result possible were a thoroughly efficient, well-indoctrinated and enthusiastic recruiting service, the splendid work of the Publicity Bureau in educating the country as to the attractiveness of Marine Corps service, the cooperation of the service at large and the inestimable assistance rendered by our many public benefactors and friends.

When we think of the old preparedness propaganda designed to get 10,000 men in one year, the recruitment of more than two thousand men of higher standard than heretofore, in one week, is noteworthy. This was accomplished during the week of June 6, 1917, with an increase in recruiters of less than 40 per cent of the peace time strength.

This excellent record of the recruiting service could never have been made were it not for the injection of modern business methods into our system of recruiting. "Selling" the Marine Corps both to possible prospects and to their elders was regarded as just what it is—salesmanship. The salesmen recruiters of this new style method were active, intelligent young men of fine physique and military bearing, with a good stock of common-sense arguments up their sleeves and the intelligence to put them forward in a convincing and effective manner. They did their work without regard to hours and nothing in initiative or energy was spared. Their excellent selection of recruiting station locations was only the start of the finish.

Next in line comes the Publicity Bureau—the recruiting service's advertising agency, which is located at 117-119 East 24th Street, New York City. In the modern evolution of recruiting, advertising played a much more prominent part than many unacquainted with the activities of our Publicity Bureau would believe. The opinion is ventured that even those acquainted with that Bureau's work do not fully realize or understand the part which it has played in filling our Corps.

The Publicity Bureau is the general sharpener of the keen edge of recruiting. What printing and language is to the human race, that Bureau is to the recruiting service. It has exerted or caused to be exerted a power over people which was possessed by no other element of recruiting. The personal appeal of recruiters has in-

fluenced men to take the final step, but the Bureau has done much to bring about opportunity for that personal appeal, and has put the applicant's mind in a receptive mood for the vital question.

The Publicity Bureau has followed the advertising rule of three—repetition, repetition and repetition. It put the first war poster before the public. This appeared on the day war was declared. It has since produced many brilliant posters which were works of art and far different from the wooden "cuts" of the distant past. These posters attracted not only those who wished to be "warriors bold," but deep thinking young men who wished to "do their bit" and "do their best" in the most expeditious manner. The old fashioned posters, hung in remote corners of village postoffices, portrayed groups of handsome dummies, rigidly posing in full dress uniforms which seemed to have been sewn up the back. They were scarcely as lifelike as the wood cuts of the continentals, with which the posters of the revolutionary period were illuminated. The new posters tingled with life and color,—they were tenacious clutches on the attention of the twentieth century youth. They were depictions of actual service life, done by the foremost American artists. The recruiting service found no difficulty in placing them in conspicuous places on billboards, in store windows, public buildings, places of business, etc.

The recruiting booklets and literature produced by the Publicity Bureau are A-No. 1 expositions of patriotism and business inducements, on the whole, wear "knockouts" when it came to *practical* to make the blood surge and the heart beat faster. Their inducements on the whole, were "knockouts" when it came to *practical* patriotism.

Another valuable feature successfully carried on by the Publicity Bureau was the mailing of "punch" letters with the personal touch. Through the cooperation of the service in general, the recruiting service in particular, and a legion of high-spirited citizens, about a half-million "live" names and addresses of prospects has been constantly on tap at the Bureau. Snappy personal letters have been sent these prospects at regular intervals, and astonishing results were obtained by this method. Although the cooperation of the service at large has been good in this comprehensive campaign, the writer is sure if more knew and realized what an additional service can be rendered in this manner, they would furnish the Bureau with the names and addresses of all eligible prospects of their acquaintance and would urge others to do the same.

As a first class illustrating agency the Publicity Bureau stands supreme. Probably there are few more effective means of creating lasting impressions than by means of photographs. Keeping our Corps in the limelight by frequent illustrations of its activities appearing in newspapers, magazines, etc., has not *just happened*. We have had to win all this space by hard work and "the goods." The photographs the Bureau turned out were so good and so timely they simply won space when brought to the attention of art editors, etc. Our Publicity Bureau not only produced these photographs, but they also brought them to the attention of the proper people, and furnished them gratis. They have acquainted editors with the picturesque feature of our service and created such an interest in the Marine Corps that the public now demands the publication of pictures of what the Marines are doing. We now have the leading photographic agencies of the country photographing us for publication.

The statement that the Publicity Bureau produced these photographs should be qualified. Although the Bureau photographers personally took many of them, a great part of those published were taken by professional and amateur photographers throughout the Corps, who sent prints or negatives to the Bureau. As we maintain no chain of authorized photographers, too much stress cannot be placed upon the urgent need of every Marine cooperating with the Bureau in this respect.

Photographs have also been used by the Bureau for a semi-monthly pictorial service which is exhibited, neatly framed, in store windows, cigar stores, pool rooms and other places where men congregate. Illustrations for lantern slides for showing in moving picture houses have also been produced.

The Bureau is also equipped with a modern "movie" outfit which is operated by an expert cinematographer, who also wears the forest green. Civilians are not employed in any capacity at the Publicity Bureau. The leading moving picture enterprises of the country have been furnished with films showing Marine Corps activities—"reel" recruiting, this.

The work the press department has carried on has been no small factor in getting desirable publicity for our Corps. Press work is the most valuable form of advertising, not because it is free, but because it is read as news by those who take little or no interest in the freak advertisements. The Bureau's press despatches have

attracted the attention of the editors of our biggest dailies and have won space. Many feature articles prepared by the Bureau's staff of writers have appeared in newspapers and magazines at regular intervals.

Probably one of the greatest single elements which has, indirectly, helped our recruiting is the *Recruiter's Bulletin*, a 32-page monthly trade journal. It has not only kept recruiters, who were necessarily separated from barracks activities and comrades, posted as to the current news, comment and activities, but through its column an added *esprit de corps* has been stimulated and maintained throughout the entire Corps. It has been a link between the recruiting service and the Corps at large. Its circulation has not been confined to the recruiting service; its readers and contributors cover the globe. Everyone connected with the Corps, and ex-members, are urged to contribute news, comment and honest criticism to its columns.

Since the writer's detachment from the Publicity Bureau he has been surprised to hear the remark that "the Publicity Bureau is a huge joke." And this erroneous impression is not confined to the enlisted men. In some parts a sentiment has been noted that the Bureau is a haven of rest for swivel chair heroes whose artistic temperament would not permit them to "soldier." Any such remark or sentiment is made or fostered in ignorance of the activities and functions of that Bureau, and any member of the Corps who harbors any such ideas surely would change his mind if he knew the scope of the Bureau and the truly wonderful part it has played in filling our Corps with officers as well as men.

The writer has observed that Bureau from three angles—the recruiting service, the line, and from within, and has no hesitancy in stating that it is a success to the *n*th degree—and that its success is no accident. It is the result of skill, pluck, push and a combination of teamwork with star individual play.

The cooperation which business concerns, postmasters and service wives have given our recruiting campaign is worthy of mention.

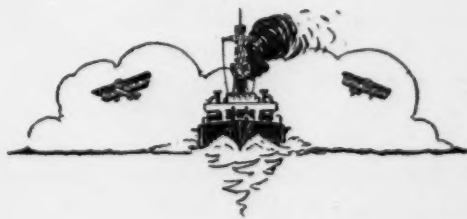
Business concerns have combined Marine Corps activities and slogans with their paid advertising, have permitted Marine Corps window displays and similar innovations, have gladly allowed Marine Corps advertising to be placed prominently about their places of business, on their wagons, trucks, etc., and have left nothing undone which would further the interests of their Marine Corps and their country.

The postmasters of the country have opened up virgin recruiting fields and have added many to our Corps who might otherwise never have heard of the "Soldiers of the Sea." This interest in the Marine Corps was stimulated by the recruiting service and the bounty allowed for accepted applicants.

Service wives can and have done much to benefit the Marine Corps. They have moved about in neighborhood circles spreading the gospel of their husband's profession. The service has been explained by them and literature furnished to those interested. To a certain extent their policy has been, "educate the parents as to the advantages of Marine Corps service, and we stand an excellent chance of having the son's name borne on the muster rolls of the Corps." These service wives have also done much in carrying out special advertising campaigns by automobile and otherwise. When we enter upon a new recruiting drive, we will surely welcome the assistance of our "better-halves."

One of the first things a Marine acquires is the Corps spirit. We rejoice at seeing our Corps mentioned in the press, we can all assist in this work; we like to see pictures of our Corps' activities published,—we can help along these lines; we want the men we command or serve with to be high grade men,—we can help make them so by increasing the number of applicants from which the recruiting service selects the Corps; and it is a pride to us to have our Corps first to be recruited to authorized strength, with volunteers,—we surely can see that there is a certain amount of responsibility resting on our shoulders—responsibility aside from that involved in self-service.

A "two-in-one" service—self-service and influencing others to serve with us.

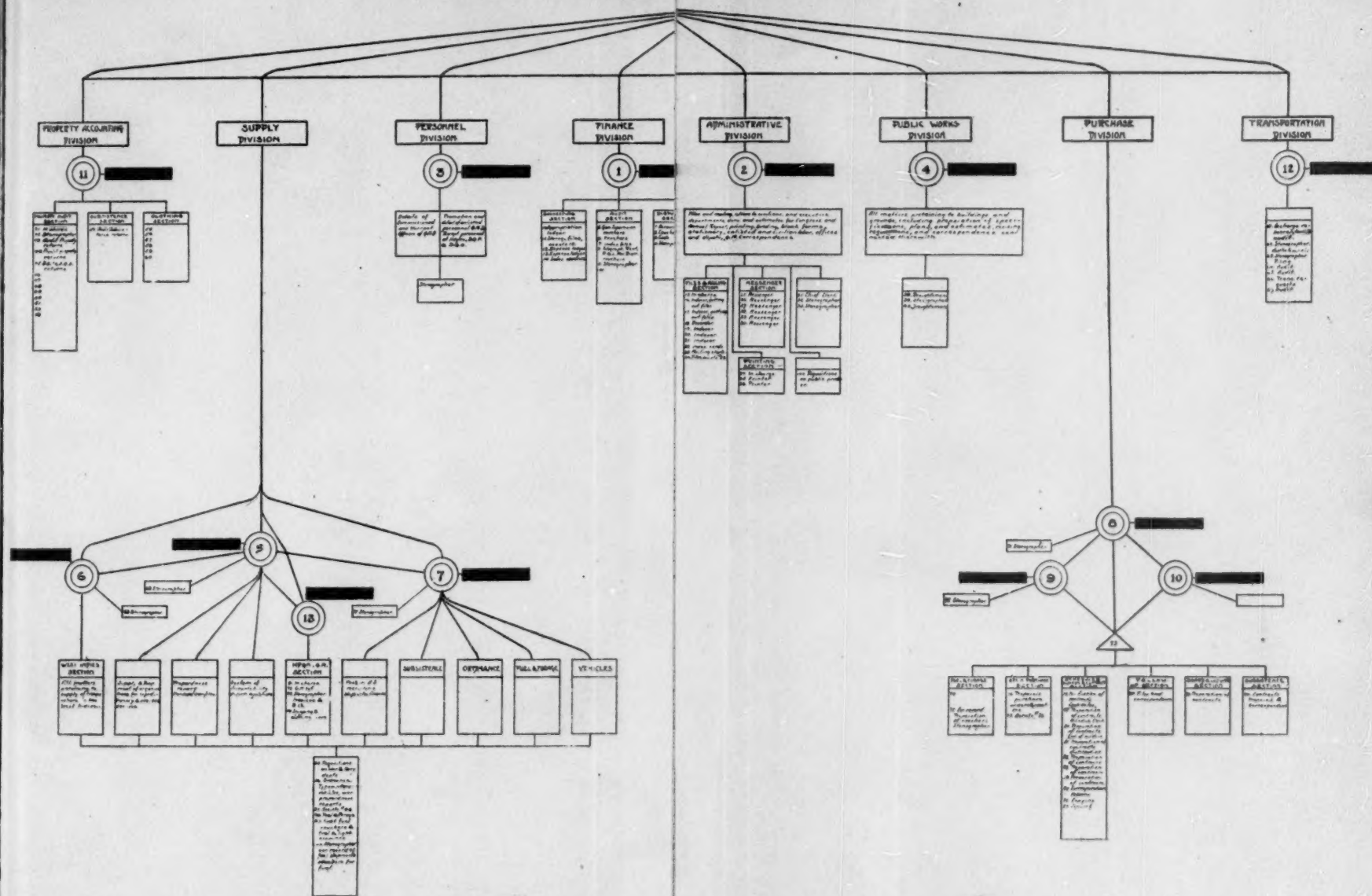


QUARTERMASTER'S DEPARTMENT, U. S. MARINE CORPS¹

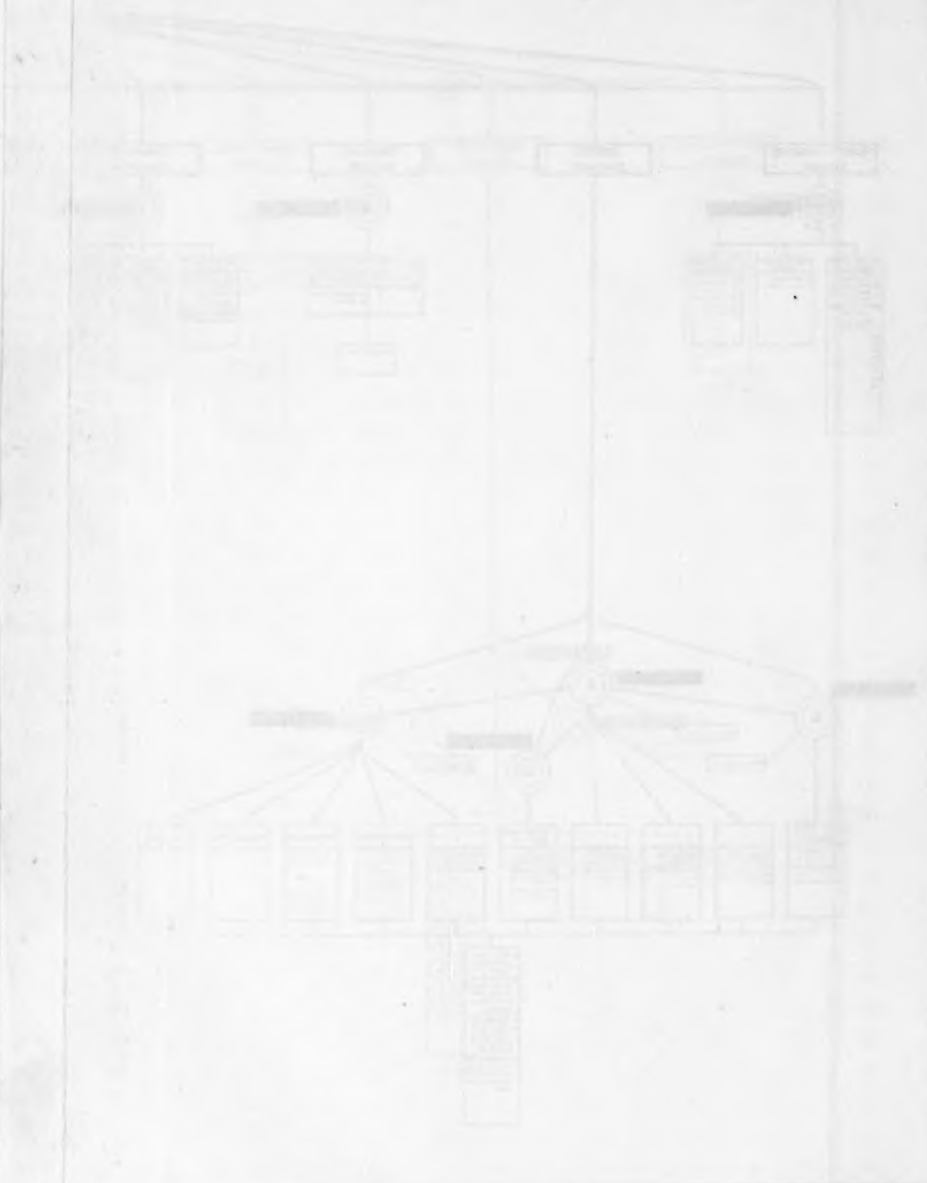
WHEN, on April 6, 1917, a state of war was declared to exist between the United States and Germany, the authorized strength of the Marine Corps was 14,981 men, and of this number there were, roughly, 12,000 in active service. By an Executive Order, dated March 26, 1917, a temporary increase was authorized, and on May 22, 1917, the Congress made a further increase, bringing the total strength to 30,000. The Recruiting Service, with its Publicity Bureau, at the time was more efficient than ever, and men were coming in at a rate never before anticipated. This made it necessary for the Quartermaster's Department to provide at once the required facilities for the more than doubled strength of the Corps.

The Quartermaster's Department had previously met with the commendation of the Secretary of the Navy, and of the Major General Commandant, for the manner in which various expeditionary regiments had been outfitted and sent away. To meet the new conditions, however, it became necessary to expand the organization—a difficult problem in itself, for where were the officers with the needed experience in such work. It was, however, solved, and, as has been proved since, it was most satisfactorily solved, by commissioning all the quartermaster clerks and many of the older quartermaster sergeants; men whose education and training from long, practical experience had fitted them for this work far better than any civilian could have done it, no matter what his previous business experience might have been. The men had no other interests than the Marine Corps. No business ties of any sort interfered with their daily work, and the fact that the Corps proceeded, unaided, to prepare large camps for training the new men, to make the necessary contracts for clothings, rations, and equipment that were needed will long be a source of pride to every member of the Department. The responsible officers of the Corps proved their keen business sagacity and foresightedness by having every plan completely worked out in detail ready to put into effect long before

¹Compiled from notes from different officers of the Marine Corps and from reports of manufacture and construction work.



U.S. MARINE
QUARTERMASTER



6

the declaration of war. So complete were these plans that the quartermaster, two months before the President affixed his signature to the declaration of war, completed arrangements for purchasing almost all the supplies needed by the Corps for the first year of the war.

A concentration and training camp for the accommodation of 7,000 men was established at Quantico, Va., on a site which had been previously chosen by a board of officers from headquarters. Ample space was provided for the construction of the camp and maneuver ground for each organization. An artillery range, and later a large and very complete rifle range, were established. For each company there is a unit consisting of four barracks buildings, each accommodating fifty men, a combination mess hall and galley, and a lavatory and toilet house. Every modern facility has been provided, and nothing neglected which in any way conduces to the health and comfort of the officers and men. Provision has been made for sufficient storage space; corrals have been built; water, sewer, and electric light systems have been installed; and concrete interior roads constructed, connecting every part of the cantonment. There is a complete cold storage and ice plant in operation, as well as a power plant. All the above work has been performed on plans made by the Quartermaster's Department.

This cantonment, as finally constructed, is sufficient for the accommodation of two regiments of infantry approximating 3,100 men each; one regiment of artillery, about 700 men each; one base hospital accommodating 92 patients; administration and amusement room sufficient for the accommodation of 3,000 men; barracks class and lecture rooms for officers under training, accommodating 600 men. An officers' clubhouse was also provided; as well as administration, post exchanges, dispensary, guard, postoffice, storehouses, and complete bakery with modern machinery of a capacity for 10,000 men, etc.

The character of the above buildings is of simple construction, and all are heated with stoves, and even during this severe winter have been comfortable. All side walls and floors were doubled, and the roofs covered with rubberoid. All buildings are completely screened. The water is supplied from artesian wells.

Another such encampment was established at Paris Island, and further accommodations were built at the Marine Barracks, Mare Island, by making additions to the existing buildings.

The problem at Paris Island was even more difficult than at

P.I.
Quantico, for the recruit depot had been established there over two years, and the new cantonment had to be built without disturbing the very important work of training the recruits then present. The station had formerly been a small navy yard, which later became a detention camp for naval prisoners. It is situated on an island, thus making necessary proper wharves and landing for handling the large amount of new material needed for the improvements. Repairs to wharves and approaches were made. Proposals were issued for the construction of new quarters to accommodate 6,000 men, and the contract was awarded to a New York firm on a cost plus basis. The new water system called for digging five wells, constructing pressure tanks, mains, branches, and connections to all parts of the cantonment and quarantine stations. New reservoirs were built, and a new main laid from the pumping station to the station proper. A separate sewer system was installed, owing to the inadequate facilities afforded by the old system. An ice and refrigerating plant and power house were installed and placed in service in record time. A separate postoffice building was constructed after a request had been made on the Postoffice Department for this work, which request was refused owing to lack of funds. All buildings were suitably screened; mess tables, benches, and scrubbing tables were built; and concrete floors laid in all the older buildings used as mess halls and kitchens. The final work was building new roads throughout the cantonment, and today Paris Island is a model cantonment in every sense of the word.

The depot of supplies at Philadelphia consists of the original buildings together with additional ones now under construction. The advent of war has made it necessary to devote all available space for manufacturing, and three large storehouses were rented in order to make this space available, so that at the present time the entire depot proper is a manufacturing plant only, and all sorting and shipping is cared for in other buildings. With the exception of rifles, bayonets, pistols, condiment and bacon cans, canteens, shoes, hats, socks, knit underwear, and gloves, almost every article of clothing and equipment is made by this depot. Owing to the large increase in the Corps it has become necessary to have some of this clothing made by contractors, but when the new buildings are completed all this work will be carried on at the depot.

As few officers have had an opportunity to inspect this branch of the Quartermaster's Department, the following description may be of interest: The depot is divided into the following departments:

Manufacturing, shipping, accounting, and disbursing. It employs over 1,200 men and women, about 100 of whom are enlisted men of the Marine Corps. Raw materials and finished products are competitively purchased in the open market in the usual manner. Such articles as are ready for service are carefully inspected, boxed and stored, awaiting requisition from the various posts. The unmanufactured materials are inspected, and stored until needed by the manufacturing department. The inspection of fabrics is most interesting. For instance, when bidders on certain fabrics or threads submit samples, they are put through every possible test. A fabric must have so many threads to the inch, and both warp and filling must be made in certain ways, as different strengths are desirable. The thread is subjected to tests which show its breaking strength. All webbing and canvas for tent and equipment is subjected to this same painstaking test. Good wool is composed of certain standard mixtures, which bidders are required to use. Shoes have to pass not only factory inspection by Marine Corps Shoe Inspectors, but are again inspected when received at the depot. Even the half-soles and heel tops have to be examined, and each pair passed by an expert leather worker.

The manufacturing department consists of the clothing factory, equipment factory, machine shop, and woodworking shop. The clothing factory makes all chevrons, stripes, and insignias for the special ratings; pajamas, drawers, all flags, caps and coats of all kinds, as well as trousers. Many requests are received from officers who desire to have uniforms made, but since the corps has grown so large, it has been impossible to comply with their requests, as a separate department would have to be organized for this sort of work.

The equipment factory makes clothing bags, leather belts, saddles, and mounted equipment complete, canteen covers, haversacks, pack carriers, pistol holsters, all the various leather pouches used, and all the canvas articles now used by the Corps. The hardware for all this equipment is manufactured in the machine shop. This shop also produces all the field ranges, water cans, garbage cans, meat cans, buckets, and practically every fitting used by other departments. After new machinery is received all canteens, cups, knives, forks and spoons, and cans for the field equipment will become a part of the depot output instead of purchasing them outside, as is done at present.

The woodworking shop makes packing boxes, barrack clothing

boxes, hand carts, cot frames, all classes of tent poles and pins, camp stools and cots, trunk lockers, company police chests, and, in fact, every sort of filing chest now used in the field is turned out at the depot. This shop is a model of efficiency, as there is practically no waste. The small scraps of wood become pins, shelter tent, round; the thin ones are used to support trunk trays and divisions in the filing cases, and the sawdust is burned in the power plant.

The shipping department comprises the store rooms and accounting offices. This routine is so well adjusted that requisitions are usually acted upon the day they are received. Embargoes and lack of stock are the only things which can interfere, for there are no office hours at the depot when stores are needed. When transports are being loaded the motor trucks run continuously until the last package is on board, no matter what the hour may be.

A new office has just been established in Charleston, S. C., to expedite the supply work for marines on expeditionary duty in southern regions. Formerly shipments to Haiti, San Domingo, Cuba, and all the various places where marines are doing duty, were made from New York, Philadelphia, and Norfolk, or any convenient port where vessels could be obtained. This work grew to such proportions, and the war made vessels so uncertain, that the Marine Corps had to establish its own shipping system. The Purchasing Quartermaster at Charleston was the result.

Our men must be fed, clothed, quartered, armed and equipped; their uniforms and shoes kept in repair, bed linen laundered; and, in fact, every possible present and future want must be anticipated and prepared for by the Quartermaster's Department. The men are provided with complete gymnasium outfits, and the necessary sporting goods with which to play all the popular outdoor and indoor games, such as baseball, football, basket-ball, tennis, and many others. Good libraries exist in every post, well supplied with a large assortment of popular monthlies, weeklies, and daily papers and magazines. Wherever a marine may be serving, whether in Alaska, Peking, Nicaragua, or the West Indies, everything needed for his health, comfort, amusement and contentment, as well as the articles necessary to qualify him as an efficient soldier, is furnished him by the Quartermaster's Department.

The ink on a man's enlistment paper is not dry before the Quartermaster's work begins with him. He is furnished with certain articles of clothing and a toilet kit, which is complete, to needles and thread. In his daily military life he is provided for with great

care. This care continues from the date he enters the service until he is separated from it.

The many enlarged activities of the Quartermaster's Department detailed in this article could never have existed without some central office or directing force controlling them all. This we have in the office of the Quartermaster of the Marine Corps, in Washington, D. C. The brief description of Quantico and Paris Island showed them to be very busy offices from the Quartermaster's viewpoint, and the depot of supplies an extremely busy one. Now imagine the immense amount of thought and consideration which must be given each of the thousand and one questions which daily reach the Washington office. Everyone of them must be decided or referred to the office which can properly decide them. In expenditures, and in contracts, the many regulations must be carefully observed. The accompanying chart will show the manner in which work is distributed and handled in the office of the Quartermaster at headquarters.

Since the declaration of war, 23,000 *additional* men have been completely equipped, and five regiments, or over 14,000 men, have been equipped and dispatched on expeditionary service to various points.

It is hoped that the foregoing notes, covering the activity of the Quartermaster's Department, may be of interest to every officer in the Corps, and bring to each of them a more complete realization of the large amount of work which falls to that department.

It is the aim of the Quartermaster's Department to work in thorough conjunction and harmony with the line of the Corps, and its constant effort is to supply the line with everything needed for its complete equipment. Efficiency in any military organization can only come about by complete coordination between the line and supply departments, and a friendly feeling must exist always to produce this efficiency. All are working for the same common end, and the line can help the Quartermaster's Department by timely suggestion and wholesome criticism in the same manner that the Quartermaster's Department attempts to help the line by anticipating its needs, and promptly acting on all of such recommendations and suggestions for improvement. This harmony and good feeling which has fortunately existed in the Marine Corps has obviated any line and staff differences, and has contributed largely to the efficiency for which the Marine Corps so earnestly strives.

PAY ROLLS

FIRST LIEUTENANT ROSS L. IAMS, U. S. M. C.

IT IS the object of the following article to propose a system of accounting whereby the present payroll used in the Marine Corps will be abolished absolutely and entirely.

In modern business methods it has no place. The bulk of the present payroll, the necessary vouchers required to accompany it, the vast number of rubber stamps required by each company, detachment and recruiting stations, the mass of detailed hard labor required in the preparation of the three necessary copies are all counts in the indictment against it. In addition there is the vast waste in stationery, not only in the size and bulk of the payroll itself but the added waste arising from the necessity of furnishing each unit rendering payrolls with printed lists showing marksmanship qualifications, paymaster's manuals, decisions of the Auditor of the Navy Department and the Comptroller of the Treasury, and like publications affecting nothing but pay data.

The system at present in use is impracticable, and, in most instances, impossible in the field as well as being a nightmare to the company commander, the first sergeant and to the company clerk.

A system that is modern and complete will function under any and all circumstances, it is elastic and will accomplish results intended.

However criticism of the present method is only valuable if it is constructive criticism. Colonel Magill's article in the December issue of the *MARINES GAZETTE* in which he suggests that the payroll be made by the Paymasters' Department is most apt at this time. However, it would be impossible under the present system for the paymaster to undertake this work without a very large force, and without relieving the company commanders and the first sergeants to any appreciable extent, before the paymaster could undertake the work of making the payroll, a system must be devised whereby this becomes possible.

The accounts of enlisted men have become so complicated owing

to the numerous regulations covering pay, the various decisions of the Auditor and Comptroller, and the changes in pay status, that it is now almost impossible for the company commander and the first sergeant, no matter how proficient and conscientious they may be, to keep up with the present complicated accounts and to render a neat and correct payroll.

It will be readily conceded that a man specializing in one subject will become more expert and less liable to error than a man with numerous and varied subjects to attend to. It is, therefore, reasonable to believe that a clerk having nothing but pay accounts to handle will become so proficient as to eliminate mistakes entirely.

It is the object of this article to propose a system which will relieve the company commander, the first sergeant, and company clerk of a vast amount of detailed and unnecessary paper work, that will enable the paymaster to handle everything pertaining to a man's pay accounts with less effort and work than his department has at present, to make a permanent record for all time, and to place responsibility where it belongs—"on the paymaster's shoulders."

It has been proposed in some quarters to abolish the muster roll as being unnecessary. In other quarters it is held that the muster roll is most essential in having and preserving a permanent record of each man in the Corps. The system now proposed and described is based entirely on the muster roll, but on a muster roll that is full and complete, and which will, for all time, be a permanent and correct record of each man in the Corps.

The card filing system is the modern, and universally admitted the only efficient system, when detailed accounts are to be kept for thousands of men.

When a man enlists, in addition to his service record book, cards are prepared in duplicate. One card to be retained by the paymaster carrying the account, the duplicate card forwarded to the Auditor for the Navy Department for a permanent record in that department for the current enlistment.

These cards to be 4 inches by 10 inches, ruled on both sides for single space for typewriter, and will be large enough to permit of an entry after each payment of *paid in full*, *over paid*, and *balance due* in addition to the necessary legend at the top of the card similar to the following:

Alotment 10 months	\$10
SGT.	\$26
JONES, WALTER R.	SS
	IGCM
16 JAN 08	15 JAN 12M
2 FEB 12	1 FEB 16M
5 FEB 16	
Holds GCM No. 1455 and awd. 2/1/16.	
SS Qual as 8/10/17.	

The card will be transferred by the paymaster whenever the man is transferred. In other words the card will take the place of an individual cash book for each man.

The present muster roll, with the exceptions of "Request for Checkages, Government Property," "Post Exchange Indebtedness," "Deposits" to be used by the Paymaster as a complete voucher for the payment of enlisted men for the current month, and as the muster roll is certified as being correct by the company commander, detachment commander, or recruiting officer, the paymaster will use the muster roll and the card of each man in making up the amount of pay due each man.

Two paymaster's clerks, one supplied with the muster roll and pay cards of a company or detachment, will call for the name and amount due the Marine, while the second clerk enters the name and amount on the receipt form. For instance, the first clerk calls the name "Sergeant Jones, Walter J.," and figures as follows: Base pay \$36 plus SS \$3 plus GCM \$0.83 plus Army Act 5-18-17 \$8. Total credits \$47.83, less allotment \$10, less hospital \$0.20, less G.O. No. 100 3 days \$4.38. Total debits \$14.58, and calls "Due Marine \$33.25.

These receipts are then sent to the company or detachment commanders and are signed by the men individually, and are turned in as they receive their money from the paymaster, or the paymaster takes the company commander's receipt for the entire amount, and returns his receipt when the other receipts are turned in.

When the payment has been made and receipts are again in the paymaster's hands, the cards are again gone over and the proper entries made on them. The receipts, muster rolls, requests for checkages, reports of deposits, and post exchange indebtedness vouchers are then forwarded for audit.

Post exchange indebtedness can be checked and paid on a voucher similar to the one now used. These vouchers to be certi-

fied as to their correctness by the exchange officer and turned in to the paymaster. A column can be provided for differences paid as submitted on account of men who for any reasons could not be checked during the current month. The paymaster will also supply the post exchange officer with the amount of credit to be extended to each man.

There is nothing complicated about the preparation of a muster roll, the only additional entries required on the muster roll, following this system, would be the original entries of marksmanship qualifications. One additional carbon copy to be made to be forwarded by the paymaster with his accounts.

A first sergeant relieved of the burden of making three copies of the payroll can run off the muster roll and two carbon copies on the afternoon of the last day of the month and forward it the morning of the first day of the month. Two expert clerks could audit the entire pay accounts of the Marine Corps and still not be overworked.

This system, besides doing away with at least five tons of payrolls per annum, innumerable rubber stamps, numerous marksmanship qualifications orders, cooks and messmans vouchers, paymasters' manuals, and other publications affecting the pay data of the men, would have the added advantage of being a complete and permanent record of each man with the record in one place and easily accessible in case of claims against the Government, and no matter how long a time has elapsed the claim could be audited in a short time in one department.

However the greatest value of this system lies in its practicability, and the fact that it can be used with equal facility, in garrison, at sea or on expeditionary duty, can be used with the company acting as a unit or split up into numerous details scattered over a large area. The paymaster at headquarters can pay the entire command by simply making out receipts for amounts due, or for any amount stipulated by the commanding officer, and sending money and receipts to the company or detachment commanders.

This system serves the double purpose of placing the responsibility for the correctness of the military record of the man upon the shoulders of his immediate commander, Where It Belongs, and of placing the responsibility for all matters pertaining to the man's pay upon the shoulders of the paymaster, Where It Belongs.

A DISCUSSION OF PAPER WORK

CAPTAIN L. L. DYE, U. S. M. C.

THE article of Colonel Magill, on "paper work," published in the December, 1917, number of the MARINE CORPS GAZETTE, is of particular interest at this time, as it again calls the attention of the service to the necessity of a further discussion of the important subject of the reduction of paper work, and, at the same time, affords an opportunity to show what has already been accomplished along these lines in the past, and what is possible in the way of successful accomplishment in the future. There is no better stimulus to further accomplishment along the lines proposed than the publication of a few frank articles like that of Colonel Magill's, above mentioned, as it causes each department to take stock of what it has done, and what it proposes to do, regarding further improvement in its methods. I think it can safely be said of the paymaster's department that it has not been negligent in this respect, so far as the past is concerned. As a proof of this statement, a brief résumé of what the paymaster's department has accomplished toward the reduction of paper work in the past, and of what reforms it has proposed or recommended that would accomplish a further reduction, if adopted, is submitted.

The reforms which have been adopted and are now in successful operation, are the following:

1. The abolition of the quarterly payroll of enlisted men used throughout the service previous to January 1, 1908. Prior to that time, post and organization commanders were required to render a regular monthly roll, in duplicate, and, in addition, a quarterly payroll, in triplicate, consolidating all the accounts and payments made on the three monthly payrolls covering the quarterly period. Similarly, the adoption of the individual vouchers for the payment of officers, in lieu of the officers' quarterly payroll, eliminated the necessity for the rendition of the latter. In lieu of the quarterly payrolls of enlisted men, the monthly rolls were filed with the pay officers' returns, and the remarks thereon—made mostly by rubber stamps in abbreviated form—took the place of numerous separate subvouchers theretofore required of commanding officers as vouchers to the quarterly payrolls.

2. Arrangements were made with the accounting officers of the

Treasury Department in 1909, whereby the making of transfer pay accounts, in triplicate, by post and organization commanders was eliminated in cases where one paymaster relieved another at a regularly established office. Formerly a paymaster relieving another was required to file with his returns a transfer pay account for each officer and enlisted man taken up by him on his rolls. The paymaster relieved was also required to file a receipted copy of the transfer with his final returns on detachment. This required a great deal of unnecessary work at the posts, as transfer pay accounts of enlisted men were, of necessity, prepared there.

3. In 1912, after securing the cooperation of the Bureau of Supplies and Accounts, the paymaster's department succeeded in doing away entirely with transfer pay accounts of enlisted men, except in the cases of deserters and general court-martial prisoners. This was, at that time, considered a most radical and revolutionary departure, but is now regarded as one of the greatest steps forward in the elimination of paper work, then required of post and organization commanders, that has yet been accomplished. All officers in the service prior to that time, no doubt, have vivid recollections of the large amount of paper work necessary in connection with the preparation of transfer pay accounts of enlisted men, when expeditionary forces were to be moved in haste. As to how well the system now works, every officer is familiar.

4. In 1915, after securing the cooperation of the Quartermaster, Marine Corps, the payment of all pay and allowances of officers and enlisted men formerly paid by the Quartermaster's Department—such as commutation of quarters to officers serving with troops, commutation for heat and light, together with extra duty pay and all commuted allowances in the cases of enlisted men—was taken over by the paymaster's department. This change also resulted in a great reduction in paper work then required of individual officers and commanding officers, as it was previously necessary for them to prepare separate vouchers and rolls, in settlement of these allowances for submission to the quartermaster's department. This probably accounts for the small amount of paper work now required of company commanders by the quartermaster's department, to which Colonel Magill makes reference in his article.

5. The paymaster's department, within its own jurisdiction, has effected many other reforms, resulting in the reduction of paper work, which do not affect the service, as a whole, so directly as

those above mentioned; but which, nevertheless, have been a great improvement over former methods. Principal among these is the recent change in the methods and machinery for effecting payments to retired officers and enlisted men, and for making payments of retained pay to officers and men of the Marine Corps Reserve. These payments are now made without the preparation or filing of any vouchers whatsoever on the part of those concerned; the only prerequisite to prompt and regular payments being that the officer or man concerned keep the paymaster advised of his current address at all times. The checks in settlement of pay due these classes of officers and men are all drawn by machinery and mailed in window envelopes, thus eliminating the possibility of error, except in cases of failure to receive or report changes of address, or to receive timely notice of death, discharge or desertion. This was accomplished by an arrangement with the accounting officers of the Treasury Department, whereby a card record is prepared and kept in the office of the Auditor for the Navy Department. This record shows the entire service record, the rate of pay, and all payments made for an indefinite period in the case of each retired officer and enlisted man, and for an entire enrollment of four years in the case of each reservist.

The principal reform recommended by the paymaster's department, which has not so far been adopted, is the combination of the pay and muster roll.

The paymaster's department has several times officially recommended, not exactly the abolition of the muster roll, but a consolidation of the present pay and muster rolls, which, in effect, amounts to practically the same thing as the abolition of the latter, in so far as paper work is concerned. This question has, for the past few years, at least, been under consideration by a board of officers at headquarters, Marine Corps. This is, however, not a new question, as the records show that many years ago the payroll was also a muster roll. A combined muster and payroll has been favorably recommended by this board, and the adoption of the report of the board strongly urged by the paymaster's department, as well as by the accounting officers of the Treasury Department. It is proposed to prepare the consolidated pay and muster roll on the typewriter, so that sufficient carbon copies may be made at one writing for all parties concerned.

The foregoing should be sufficiently convincing to show that

the paymaster's department has not been unmindful of the need for cooperation with the line in striving toward a reduction of paper work to a minimum.

As to who should prepare the payroll, raises the same old question of centralization versus decentralization. Whether it is better for the paymaster, the company commander, or the commander of larger units to prepare the roll and vouchers is a question, in my opinion, that circumstances should govern. It was once thought, when each post was required to render one consolidated roll for all organizations serving in the command, that it was necessary to decentralize some of the paper work, so that the higher ranking officers would have more time for the more important duties of administration. It was then that the detail work of preparing payrolls, muster rolls, and other reports fell upon the commanding officers of the smaller units, who were in more intimate touch with all the facts concerning the men and their service records. It is believed that this is still the best system for troops who are serving at garrisons and posts within the limits of the United States, or on foreign stations where the men are not actually engaged in field operations. On the other hand, when men are engaged in field operations, or in active military campaigns, in time of war, it may be that the centralized idea of having all rolls and vouchers prepared at regimental, brigade or division headquarters by the paymaster's office, or under its direction, is better adapted to meet the circumstances in their cases.

Payrolls at posts or in the field may be prepared by the paymaster's department, where the paymaster and the men are serving under conditions that will warrant it; that is, in cases where the paymaster or his representatives can have access to all the individual records of the men. But, as the paymaster cannot legally certify the vouchers on which he pays, the commanding officer either of the larger or the smaller units would still, in a general way, have to be responsible for, and certify to, the correctness of the facts as stated on the rolls. There is no way to relieve them of this responsibility.

On the other hand, where troops are serving at posts and barracks far removed from the paymaster's office, it is believed that better results will obtain where the rolls are made by the organization commanders, and preferably by the commander of the smaller units. Under such circumstances, this would be the most practical

and direct method of obtaining a correct roll with all the facts necessary to substantiate it. Otherwise, it would be necessary for the organization commanders to supply the paymaster with the necessary data from which the latter might prepare the payrolls. This would involve the preparation and furnishing of such multifarious subvouchers and reports that the preparation of the payroll would be a small matter in comparison therewith. It is now the duty of the paymaster to see that the computations on the payrolls are properly made to correspond with the facts in each case, but the facts he must get from the commanding officer and over his signature, no matter who prepares the roll. It is possible at any time for the paymaster to make all computations and extensions in the figures on rolls, and so relieve the commanding officers of all this clerical work, but where the records are not accessible to the paymaster, he must depend on the commanding officer to furnish the facts, either on a consolidated certified roll or in other separate documents.

It is to be regretted that it is not possible, with the limited personnel, to provide a paymaster with each command. It has been the endeavor, however, to supply clerical assistance to all the larger units for the preparation of payrolls and other pay department vouchers, as far as possible, from the limited number of quartermaster sergeants available for duty under the paymaster's department. If it were possible to provide a quartermaster sergeant (P.D.) for each unit rendering payrolls, all the paper work of the paymaster's department could then be handled by them.

It is understood from officers recently returning from tours of inspection in France, that the officers of the paymaster's department now on duty there are already working along the lines suggested by Colonel Magill. It was with this object in view that the paymaster's department provided for a quartermaster sergeant (P.D.) to accompany each battalion sent to expeditionary duty in France. It was foreseen that, in all probability, it would be advisable for the paymaster to provide all clerical assistance possible to the company commanders to enable them to handle properly all of the paper work of their organizations. If the experiment proves successful, plans should be worked out whereby the paymaster's department will, if furnished sufficient clerical assistance, arrange to handle hereafter all clerical work possible connected with the accounts of enlisted men while engaged in such active operations

in the field. There is every reason why, not only the company commanders, but also the commanders of larger units engaged in active operations in the field, should be relieved of all detail work possible connected with the administration of the staff departments.

As to the preparation of payrolls of marine detachments aboard ships, the present system, it is believed, is the only practicable one. Pay officers of the Navy, as a rule, are not so familiar as marine officers with the laws and regulations relating to pay of officers and enlisted men of the Marine Corps. Commanding officers of these detachments are much better qualified to prepare an accurate roll, so as to insure receipt by the men concerned of all the items due them on account of pay and allowances. To remove the marine pay rolls from the jurisdiction of the commanding marine officer aboard ship, and place it in the hands of the Navy pay officer, would be a backward step, and, it is believed, would result in a great dissatisfaction among the enlisted personnel of the Marine Corps serving afloat.

Note that in all these changes in recent years, as detailed herein, it is the Army system we have been approaching and the Navy system we have been abandoning. The Navy system is not adaptable to our service, unless it were possible for a paymaster to serve with each organization, small and large alike. These two systems of pay (the Army and the Navy) are founded on opposite theories. The Navy system assumes that each man taken up on the rolls—by order, in every case, of the commanding officer—is entitled to pay, unless the commanding officer advises the paymaster to the contrary. Every change in status, rating, joined, transferred, checkages of pay for absence, courts-martial, etc., is reported to the paymaster by the commanding officer for note on the payroll. If not reported, the paymaster presumes there is nothing to report and pays accordingly. He, therefore, assumes no responsibility for errors or omissions on his rolls affecting pay, if not reported to him by the commanding officer.

The Army system, on the other hand, assumes that no man is entitled to pay until it has been affirmatively stated to the paymaster that the man has served for a certain period, together with a statement of all other facts, certified by the commanding officer to be correct, affecting the man's right to pay.

That the preparation of payrolls, under either system, is constantly growing more complicated from year to year, is no fault

of the paymaster's department. It is the fault of no one, but the result of legislation and regulation which all conceive to be in the best interest of the efficiency of the service. We hear much in these days of coordination and cooperation. All of us are wedded to this as a fundamental principle. The present payroll system of the Marine Corps represents an effort in this direction. It is not above criticism, and may be improved upon by all who believe in these principles, but as it now stands, cooperation actually obtains; that is to say, cooperation between elements of the service who are best informed as to the fundamentals that go to make a perfect roll. The commanding officer can give the best evidence as to the facts with respect to the service rendered by his men upon which they are entitled to compensation. His responsibility is solely that of the person who has the knowledge of these facts. The paymaster, on the other hand, is the expert as to the law through which, upon the facts so stated, a rating of pay or an amount of compensation is to be determined. With the facts authoritatively stated, he, the paymaster, can correctly determine what is due. In this particular, the payroll system corresponds to the procedure through which the rights of individuals generally are determined in courts of justice. The jury weighs the facts; the judge, after the pleading of attorneys, determines the law. Between these two elements the individual rights may be determined. From the court of first instance, appeals properly lie to higher courts, so it is also with our payroll system. Each and every roll, after its settlement, is reviewed by the paymaster, at headquarters, and all that paymasters fail to pay that is properly due is set out by him for subsequent payment. It is well known that during the past ten years, this system of the paymaster's department has reduced the number of claims theretofore filed on the Auditor for the Navy Department to the minimum. Formerly, zealous and enterprising commanding officers spent a great deal of their time, especially afloat, in advising the members of their commands in detail, as to how claims were to be submitted and prosecuted before the Treasury Department. Now, however, by the proper preparation and certification of their payrolls, they have been relieved of the necessity for such procedure.

BLOOD IS THICKER THAN WATER¹

THE UNITED STATES MARINE CORPS' RECOLLECTIONS OF THE ROYAL
WELSH FUSILIERS

BRIGADIER GENERAL, GEORGE RICHARDS, U. S. M. C.

WHEN the American Public noted in the morning papers of June 10 that Major General John J. Pershing, Commander of our Armies to be sent to France, had at last disembarked from the Baltic and set foot on British soil, they read there with satisfaction that the military bands greeted him with but one air, that to which the national hymns: "America" and "God Save the King" are set. But there were a few of us, American Marines, who were filled with greater pride in reading this welcome news. We saw there that the Guard of Honor that presented arms to our most distinguished soldier was composed of a battalion of the Royal Welsh Fusiliers, the famous Twenty-Third Regiment of Foot. For the selection of the Welsh for that duty is of particular significance to all Americans; the Twenty-Third Foot is the only regiment of British regular infantry that has ever served with regular forces of the United States in battle against a common enemy. The Royal Welsh Fusiliers, the Twenty-Third Regiment of Foot, has a record of distinguished service covering more than two centuries. Called into being in 1689, it was created to take part there in the struggle of William of Orange, on the English throne, against the well organized attempts of a mighty Bourbon military autocrat, to force his will upon other freer but less disciplined nations of Europe. History is now repeating itself in this particular—the Twenty-Third is now engaged again in a like struggle with the greatest of military autocrats of all times, in a cause in which the American people are also consecrated—it is, therefore, most fitting that all Americans should know the famous Royal Welsh Fusiliers and the circumstances of their previous service with the United States Forces.

It was during the Boxer Uprising in China, in the summer of 1900, that we, of the United States Marines, formed our acquaintance with the Twenty-Third Foot. When General (then Major)

¹By courtesy of the Century Publishing Company, of New York.

Waller of the Marine Corps landed at Taku, China, with a battalion of American Marines hurriedly dispatched from the Philippines, he was joined by a battalion of the Royal Welsh. There at the mouth of the Pieho River, more than fifty years before, Captain Josiah Tattnall, of the United States Navy, on the American man-of-war "*Toeywan*," uttered his memorable words "Blood is thicker than water," words forever to be cherished by all the English speaking peoples. But the Royal Welsh and the American Marines there wrote these words into actual deeds, for almost with their arrival they became engaged in battle against the common enemy. These British and American forces were at once merged into a column in military operations, having for their immediate object the relief of the Tientsin Foreign Concessions near the Walled City of Tientsin where European and American residents, including women and children, were beleaguered under fire of hostile Chinese troops associated with the Boxer rebels. With them later came Russian, Italian, Japanese and other forces. Tientsin stood squarely on the way to Peking. It had to be taken first. These forces accomplished this task; opened up the Concessions after marching ninety-seven miles in all directions in five days, fighting all the way, living on one meal a day for the entire time. With them there was a force of British bluejackets under command of Admiral (then Commander) Cradock, Royal Navy, whom we remember now as the British Commander who more recently went to his death on his flagship, the *Good Hope*, in battle early in the great war between his fleet and the German under Von Spee. But the writer's acquaintance with the Royal Welsh Fusiliers came later, for after the Tientsin Foreign Concessions were relieved it became necessary immediately to take the walled city of Tientsin, a sterner task. So on the night of July 12 all available troops were collected at the Concessions for an early morning attack the day following. In the darkness of that night we American Marines assembled on Victoria Road in the British Concession. The Twenty-Third Foot came up and halted in our immediate presence. Presently the word was given to advance, "Royal—Welsh!" was the command instead of our "Forward—March!" and away went those khaki clad British soldiers into the darkness, the Marines following. When dawn came on the open plain on our left there was revealed to us the deployed skirmish line of the Welsh with the khaki covered helmets standing clear on the sky line. But on the backs of the British officers we noted something black in the shape of a triangle. "A good idea," we thought,

"the men will know their officers in the scrimmage but the enemy in front will see no difference in the dress of either." But we thought no more of that for interesting things immediately began to happen to us. But, later in the day, after we had advanced under fire with heavy losses, we finally reached a position from which we could proceed no farther. We were then under the walls of the fortified city of Tientsin on the extreme left of the line, the exposed flank, and there we were joined by the Royal Welsh. We promptly "dug in" together, prepared to stay. In this effort we got to know the British officers better. When we had settled there to stick we turned to Captain Gwynne, who commanded the battalion. Noting that the black triangle was of ribbons, we mentioned that we thought it a clever idea so to distinguish their officers to their men and not to the enemy's snipers. "Not so," said Gwynne. "It serves that purpose here, but such is not the object. These ribbons are the 'flash' preserved by us in memory of our service in America during your Revolutionary War." Then we pressed him for particulars. He said: "When we left England for the American Colonies before your battle of Lexington, and during our service there, everyone wore pigtails or queues, soldiers and civilians alike. Our active service began at Bunker Hill and did not end until the surrender at Yorktown. Afterwards the Twenty-Third reached England, went to Martinique and San Domingo, then later to Nova Scotia. There we learned, a year or more after its discontinuance, that the pigtail was no longer in fashion. As we were the last regiment to wear the queue we took the black velvet ribbons with which the periwig was tied and sewed them to the backs of the collars of our tunics. Years after, at Gosport, the Inspector General wanted to know what those ribbons were doing there. He declared there was nothing in the regulations so authorizing, and ordered their discontinuance. Consternation filed us, but our Colonel appealed to the War Office. Sir Francis Gordon, at one time our Colonel, was then Quartermaster General of Forces; his influence we at once sought. And so, very shortly afterwards, an order was given which read: 'The King has been graciously pleased to approve the "flashies" now worn by the officers of the Twenty-Third Foot, or Royal Welsh Fusiliers, being henceforth worn and established as a peculiarity whereby to mark the dress of that distinguished regiment.'" All of which was told us while we were under the constant fire of the Chinese, with our own American dead and the British dead and wounded all about us. "And so you fought at Bunker Hill," we said. "Yes," said

Captain Gwynne, "and you jolly well shot us up there. Some sort of an order given your people to wait until we got to the top of the hill. At least our regimental history so states." "Yes," we said, "every American schoolboy knows that that order was, 'Wait until you see the whites of their eyes.'" "Well," said the British officer, "It cost us 800 men out of 1,200 that day. But this is all history. It's all over. But it is worth noting here, that this is a proud day for us, for this is the first time in the history of the two nations that the regular forces of each have acted together against a common enemy." So we became real friends, to remain so forever. And Major Waller wrote in his official report: "I cannot speak too highly of the conduct of the officers of the Fusiliers. This battalion has been at our side since June 23. They have responded to my orders with the greatest alacrity and willingness, all the officers and men ready to go anywhere." And the British Brigadier General Dorward, who commanded our left wing before Tientsin, not to be outdone by Waller, declared in his report:

"I desire to express the high appreciation of the British troops of the honor done them in serving alongside their comrades of the American Army during the long and hard fighting of the 13th instant and the subsequent capture of Tientsin City, and of my own appreciation of the high honor accorded to me by having them under my command.

"The American troops formed a part of the front line of the British attack and so had more than their share of the fighting that took place. The ready and willing spirit of the officers and men will always make their command easy and pleasant and when one adds to that the steady gallantry and power of holding on to extreme positions, which they displayed on the 13th instant, the result is soldiers of the highest class."

But there are many other things that might have been told us about the Royal Welsh we have since learned.

The Honorable Sir William Howe, Knight of the Bath and Commander-in-Chief of His Majesty's armies in America after Gage and until 1777, was designated to that high command from service as a Colonel of the Royal Welsh. When he was relieved as Commander-in-Chief and Sir Henry Clinton designated in his stead, his brother, the famous Admiral Howe, came to American shores in command of the British fleet. At that time the French had openly

come to our help with a French squadron, stronger than that of Admiral Howe, under the command of Count d'Estaigne, ready to dispute with the British the control of American seas. Howe's ships were insufficiently manned; he had no marines; he needed soldiers and made his wants known. Out of compliment to their former Colonel's brother, the Royal Welsh volunteered for this duty. The fleet went into engagement with the French, but a gale dispersed them. But there were isolated fights, the most notable of which was that of the French *Caesar*, a seventy-two, with the British *Isis*, of fifty guns, where the British ship carried a light infantry company of the Twenty-Third. In Howe's report to the Admiralty, he made particular mention of the spirited and gallant behavior of the Royal Welsh.

During its two hundred years of existence, this famous regiment has been the recipient of many honors. The Prince of Wales' Feathers, The Red Dragon and the Rising Sun are the badges of the Prince of Wales. They were given to the Welsh for its services in the Marlborough campaigns, when George the First, in 1714, conferred on them the title "The Prince of Wales' Own Regiment of Welsh Fusiliers." To commemorate this distinction, it advances to the command of "Royal—Welsh!" instead of to our "Forward—March!" And the White Horse of Hanover, the badge of George the Second, as granted to the Twenty-Third after the Battle of Dettingen (1743), where the King personally witnessed the regiment's gallantry. The Sphinx was awarded them after the Egyptian campaign in 1801, where the Twenty-Third carried a high disputed sand-hill at the landing. Its battle honors began with Namur (1695) on what is now Belgian soil near which the greater part of the regiment is now fighting in the great war of today. Its honors also include such names as Blenheim, Oudemarde, Egypt, Martinique, Corunna, Salamanca, Peninsula, Waterloo, Inkerman, Sebastopol, Lucknow, Burmah, Peking and Ladysmith. No regiment which, during by far the larger part of its history, has consisted of a single battalion has a list of "battle honor" as long as that of the Twenty-Third Foot. And it is worth mentioning that they were offered the right to inscribe on their colors "Bunker Hill," an honor they declined because that fight, they said, was with Englishmen, and they didn't wish it commemorated. Which expresses in another way what was said more recently by one of our foremost public men, that the Revolution was a revolt against a Teutonic king,

George the Third, led by an English gentleman—George Washington.

We are fortunate to know a little of the service of the Royal Welsh in this great war. Four days after its commencement in 1914, its home battalions were assembled at Wrexham depot for service in France. One battalion, however, remained abroad where its service continued in the German Cameroons with the Anglo-French forces under Brigadier General Dobell, a distinguished officer of the Royal Welsh. But the battalions from Wrexham were dispatched immediately to France where they fought and bled in the stress of these times. When after the German advance was hurled back from the Marne, and the modern trench warfare was initiated on the Aisne, after months of the fiercest fighting there occurred an incident, a moment of relaxation, if it may be so called, that many of us read of at the time. On Christmas Eve of 1914, on a sector manned respectively on opposite sides by the Saxons and the British, the firing suddenly ceased, but not by orders. The Saxons shouted out first, "Don't shoot." The British lads held up their hands in assent. A barrel of beer came over the trenches. And the British in return gave over surplus rations the Saxons were eager to get. These British troops who responded to this invitation were none other than the famous Twenty-Third, the Royal Welsh, the old associates in China of the United States Marines. Let us remember that Christmas Eve of 1914, and those Saxons, our enemies now, in the great war of today. The carol chorus that arose from the German trenches that night came from hearts that for the time being expressed "Peace on Earth and Good Will to Mankind." Their ways are not our ways now, though their strain is in the Anglo-Saxon stock. But their song silenced for the time the crack of the rifles of the snipers levelled across "No Man's Land." "You English there, why don't you come out?" the Saxons called. And the candles then burned along the parapets that were hitherto guarded with ceaseless vigilance. A British chaplain gave to a Saxon colonel a copy of the English Soldier's Prayer, and in return received a cigar with a message for the bereaved family of a certain wounded British officer who had recently died a prisoner of war. And on the following Christmas day, the Saxons and Welsh buried their dead, and even played together a game of football, which the Saxons won. That such things could have occurred in the midst of war seems unbelievable to us, but that they did occur there can be no mistake; it brings

back our faith in the virtues of all mankind. But that truce was not an official truce, for no Kaiser willed or authorized it. It came from the hearts of those who were bearing the brunt of the war, but it expressed a sentiment upon which in the end the world will once again be united in a "Peace on Earth and a Good Will to Mankind."

The aims of the great democracies in this great struggle are clear to all English-speaking peoples and to all others allied with us in this great struggle. We know the part we are to play in making this world safe for democracy; we know our task to establish in the end a league of honor under which an enduring peace for all mankind is possible. The resources of the entire nation have been pledged to the fulfillment of these aims. And, in this connection, something else was taught to the Marines in China by these self-same Fusiliers, but in this case by an humble private who served in their ranks. Toward the close of that eventful day before Tientsin, the 13th of July, when we British and Americans had fought together for 12 long hours in the broiling sun, without food or water, with ammunition wellnigh exhausted, it became necessary—in fact it was imperative—that a message be sent back to General Dorward, British Army, our Brigade Commander, giving him an account of our condition. Captain Gwynne asked for an orderly: "A nippy chap," he cried out, and a little Tommy Atkins was sent him. He was told by Gwynne of the message he was to carry, he repeated it back to show that he understood it, and then said, "Might I choose me own way?" Now the field in the rear of us was well covered with the enemy's fire. "Of course," said the Welsh captain. We were not concerned with the manner or method in which he carried the message; all that we wanted was that it should be delivered, so that we might receive in reply the Brigade Commander's instructions. He had a right to choose his own way.

So has it been with us in the great task to which we, from our hearts, have set our efforts. No other nation, no other peoples, pointed to us the way in which we should come into this great war. We choose our own way, and gladly and willingly have we entered it, knowing at last that it was God's will that we should be there. And so must it be with all others who will yet come with us when the truth is known; when all peoples recognize the Divine purpose of this struggle. We know that the brotherhood of man as taught by that lowly Nazarene at whose birth there came the message of "Peace on Earth and Good Will to Mankind," seems to have been

almost forgotten in that German Empire, where the only gospel preached today is the Prussian pretension that "might makes right." We know that there can be no good will between all men until there be peace and we also know there can be no enduring peace without good will to all. Well, therefore, should we remember what was voiced on that Christmas Eve from the hearts of those Saxons chained, unknowingly to them, to the wheels of the Prussian military despotism we are seeking now to destroy. That there is no room in this world for two such systems, autocracy and democracy, so directly opposed in principle to each other, we, the English speaking peoples, are certain. But there are not many of us who know from what source came that system of democracy we purpose to maintain. The body of Anglo-Saxon rights such as representative government, trial by jury, no taxation without representation, free speech, free press, habeas-corpus, the right of petition, the right of protest, the right of public assembly, owe their origin to beginnings of fifteen hundred years ago. All through the Dark Ages and in Middle Ages, and in modern times down to the abolition of slavery, these rights have been held and added to by the Anglo-Saxon race. But they did not come as summer breezes; most of them came in storm and stress, for many centuries Anglo-Saxon skies have resounded with combats for liberties, while the German in Germany knew nothing of this. For, during all those centuries, liberty has been dumb in Germany. But none the less the very germ of the institutions we enjoy, the liberty we fight for and propose to spread the world over, came from the ancestors of those very Saxons who declared that informal and unofficial truce that recent Christmas night. Their forefathers carried representative government from the forests of Germany into England. With them, it flourished in the hundred-moot, the shire-moot and the folk-moot. Puny and imperfect, but well defined, the seed found lodgment on English soil; there it was nourished and has grown into the institutions we cherish today. From these moots of the Saxons and the Angles there have grown parliaments, congresses, legislatures and constitutions, and governments expressive of the public will, the very institutions we, with all other great democracies, all liberty-loving peoples, are consecrated in arms to defend, lest they be crushed absolutely. In the proper hands the fulfillment of that task is entrusted; we, the people, will finally attain the goal by manifesting in this conflict a love for our ideals as deep as the ocean, animated by a patriotism as eternal as the stars.

Excerpts from the Statement of the Major General Commandant, U. S. Marine Corps, before the Committee on Naval Affairs of the House of Representatives on the Estimates for the Marine Corps on January 23, 1918.

GENERAL BARNETT: The Marine Corps at present has 1,230 officers and 36,334 enlisted men. These numbers include 9 national naval volunteer officers and 29 Marine Corps Reserve officers, 824 national naval volunteer enlisted men and 2,260 Marine Corps Reserve enlisted men. Owing to the fact that the Corps is full, it has become necessary to close all recruiting stations, and thus put out of business for the time being, our whole recruiting service; and as a considerable number or proportion of the men ordinarily obtained would not otherwise be in the military service, or in any event for a considerable period of time, this stopping of recruiting, even for a short time, means a corresponding loss of military strength, and at a time when every available trained man is urgently needed and should be demanded for the proper carrying out of our task in this war. This service has been worked up to a high state of efficiency by energy and attention to duty on the part of those on recruiting duty and in the publicity bureau at New York.

I am appending to my hearing, tables showing that it is necessary to temporarily increase the Corps by 11,569 enlisted men for strictly naval purposes; that is, of course, counting that the brigade, consisting of about 11,000 men, will and should remain on duty in France. I say will and should remain there, because, in my opinion, it is absolutely essential for the morale of the Corps that this should be done, as I do not believe it is possible to maintain its present properly high professional standard and morale without at least an adequate part of the Corps taking an active part at the front in the greatest war known to history. Whether or not a brigade of Marines or even a division of Marines is wanted for service in France, it seems to me to be a question far beyond any ordinary consideration as to whether that branch of the service should or should not be increased. My idea is that this is a war of such magnitude and of such vital importance to this country and to the civilized world at large that every facility in any one of the allied countries, and particularly in this

country, must be used for the turning out of trained soldiers. I feel that I can claim, without overstepping the bounds of modesty, that the Marine Corps has a very good factory and the necessary machinery for producing trained soldiers of high morale, and I can conceive of no possible reason why the facilities of the Marine Corps for the training of men should not be used to the utmost; in fact, I feel that we would all be neglecting the most solemn duty that has ever come to us if we did not use the resources of the Corps to their fullest extent in the training of men ready and fit to go to the front when needed—and that is now. We all know there is now sore need for every available man on the western front—and such need will increase enormously during the spring and summer of 1918—and instead of there being any question of not using Marines for this purpose, in my opinion the Marine representation in France should be not a brigade but a division, a division being at the present time the recognized unit on the western front. One does not hear of so many battalions, regiments or brigades, at any particular place, but always of so many divisions.

Whether or not the Marine Corps should be increased to such an extent as will allow the keeping of a division in France is a matter to be decided by the members of this committee; but, as commandant of the Marine Corps, and as a man who has spent his life in military service, I feel that I would be decidedly derelict in my duty if I did not express to you my views on this subject in the strongest possible terms, for at no time in my military career has it been necessary for me to make a statement which, in my opinion, could in any way compare in importance to the statement I now feel called upon to make, for at no time in the prior history of the world has any such war taken place—a war which is trying the powers of the greatest nations of the world to their very utmost, and I, for one, do not wish to neglect anything that I could say which might result in advancing the cause of our country and her allies. Whether or not the Marine Corps should be used to its utmost as a training school for men, may be of comparatively little importance in the whole scheme of the war, but no matter how trifling, as I said above, any act may be, if it can be shown that that act would in the slightest degree add to the military forces which we can put at the front, such act should not be neglected even in the smallest matter.

I am not in the slightest degree urging an increase of the Marine Corps for personal benefit, nor for the personal promotion or benefit

of any single officer or man in it. I am urging it because it is, as I conceive it, my patriotic duty to do it, and I can do no less than keep my self-respect, which, after all, if lost, a man can never regain. My views may not be shared in by some whose opinions, no doubt, are well worthy of consideration, but I am giving you my opinion because at the present time I happen to be commandant of the Marine Corps, and I, at least, should be able to tell you what, in the opinion of the whole Corps, is the only action which could be taken without wasting at least a very definite portion of our military forces. If the portion is small, that cuts no figure at all with what I have said. It is not a question of proportion, but a question as to whether or not we, as a part of the American people, are to make the best use of our facilities for winning this war and for preserving the free life of the nation.

I have stated above that we have need for a certain increase in men for strictly naval purposes. There is another point to which I would invite the attention of the committee, and that is, when the American troops in France take their places on the fighting line we may wake up any morning to find the papers filled with thousands of American names among the casualties. If that happens, I feel sure that the names of many Marines will be among those printed; those who are fortunately only wounded or missing in place of being killed will be noneffectives for an indefinite period, and as we cannot enlist men to take the places of the wounded and missing, the effective strength of the corps and of the Nation's military strength will be reduced correspondingly. It will be necessary, and should be attended to now, to have on hand a reasonable number of trained men to fill the places of those who are missing among the casualties; for, according to present regulations, we cannot enlist any men to fill the places of those wounded, but only to fill the places of those killed. To increase the Corps to the amount that I have spoken of will cost money, of course, but the whole war is costing money beyond what would be dreamed of a few years ago, and if by increasing the Corps the duration of the war would be lessened even by minutes the expense involved would be trivial. Incidentally, I feel that we can turn out trained soldiers at a minimum cost per man. The health conditions at our two training posts are excellent, the percentage of sick at Port Royal for the year 1917 being approximately three-fourths of 1 per cent.

I am attaching to my hearing different papers showing all of the activities of the Marine Corps during the past year, and I am happy

to state that these papers will show that the Marines taken into service have been well clothed, well housed and well fed, and that any success which they may have achieved already or which they may achieve in the future will be due to the fact that both officers and men have worked most intelligently and zealously for the one end; that is, toward fitting themselves for any part they may be called upon to play in this great war.

If there are any points that I have not covered in this paper on which any of the members of the committee would like to be enlightened, I shall take pleasure in attempting to answer any question they may ask me.

In the foregoing brief statement I have shown the needs of the Marine Corps, both as an adjunct to the Navy and also its service with the Army. If the committee feels that the Marine Corps should serve only with the Navy and that any increase which is given should be for naval purposes only, then it is suggested and recommended that the Corps be increased by 11,569, but if you agree with me that at this perilous time it is our duty to cooperate and bring as many effective fighting men as possible into the line, then the Corps should be increased by 38,260.

If there is to be an increase in the Marine Corps within the coming year, we will take steps to provide for the number of commissioned officers incident to such an increase by the establishment at Quantico, Va., of a training camp, to which noncommissioned officers and privates will be sent for instruction, after which, from such camp, there will be selected such officers as may be required.

To the above training camp there will be sent a quota from each post of the Marine Corps and from the Marine Detachment of each ship sufficient to be, in total, somewhat above the number of officers needed for the number of men in training at the recruit depots at any one time, and the course at the training camp will be of such duration as will admit of the selection of officers from the camp in time to join organizations formed by the graduation from the recruit depots of the men training there.

It is contemplated filling the vacancies in the commissioned rank incident to the first increment of recruits graduating from the depots, from among the privates and noncommissioned officers now in the service, and to be ordered to the training camp mentioned above, and it is intended that after the first increment is officered the enlisted men of this increment will have an equal opportunity for taking the

training camp course for officers as the other men now in the service; in other words, men enlisting in the Marine Corps, in the event of an increase, will not find vacancies in the commissioned ranks filled, but will have an opportunity to compete for such commissions.

It is my intention to fill all vacancies which may occur from time to time in the commissioned personnel from among the enlisted men of the Marine Corps and from graduates of the Naval Academy.

The Marine Corps should have a complement of officers, temporary as well as permanent, in proportion and distribution in rank, as set forth in the appropriation bill of August 29, 1916, for various reasons, one of which is that it will give a larger field from which to select officers of a certain rank for a duty commensurate with such rank. And, further, it is a recognized custom in all military establishments the world over to provide the requisite number of officers of all grades with any number of men authorized. To allow officers only up to and including major is a seriously faulty arrangement, and one that should be corrected by providing the proper officers of all ranks.

The cantonment at our recruit depot at Paris Island, S. C., is similar to the one at Quantico, and holds about the same number of men. It has been most serviceable, and has made it possible to house thousands of recruits who came in so rapidly just after war was declared. This, like the Quantico cantonment, had to be built on rented land. In my opinion, every interest of the Government would be subserved by the purchase of the whole island, and thereby removing what from time to time has been very objectionable; that is, the proximity of very undesirable people who live on the island. In my opinion the island could be bought for a very reasonable sum. In this case all of these objectionable features could be removed, thereby adding very greatly to the discipline and health of the command.

In relation to the establishment of the east coast post as Quantico, or at some other point, and the establishment of a large post at San Diego, Cal., it has been brought more and more home to me that the largely increasingly manufacturing industries of the different navy yards make it practically impossible to accommodate marine posts inside the navy yards. The New York barracks will soon have to be given up, and probably in the not distant future, Norfolk as well. This simply means that quarters elsewhere must be provided, and in my opinion it is impossible to justify a longer delay,

for when the time comes that the barracks in the navy yards have to be given up for industrial purposes the need is so pressing that there is no time for delay. Therefore, it seems to me essential that proper arrangements should be started now.

In conclusion, as I stated in my annual report, I deem it pertinent to add that the Marine Corps has met successfully the many difficult situations which have confronted it as the result of its sudden expansion. The entire corps has been well sheltered, well fed, well clothed, properly equipped, trained and organized for war, and thus far has carried out its mission in an efficient manner.

*Required Temporary Strength, United States Marine Corps
(Including One Brigade in France)*

Total strength of United States Marine Corps, January 22, 1918, including reservists and National Naval Volunteers.....	36,334
To increase—	
Boston and Portsmouth, N. H., as needed.....	100
New York and outlying stations, as needed.....	500
Philadelphia and outlying stations, as needed.....	300
Washington, as needed.....	100
Norfolk, as needed.....	300
New prison and oil station to be built, as needed.....	300
Charleston, S. C., as needed.....	100
Aviation, as needed.....	500
Ships' detachments, as needed.....	1,000
Total.....	39,534
Additional regiment in Cuba.....	1,073
Two regiments for advanced base brigade to replace those now on other duty outside the United States.....	2,346
Skeleton brigade for San Diego.....	1,700
	5,119

Strength of Marine Corps, including one brigade in France..... 44,653

There are a great many ships that they have no detachments on, such as battleships and first-class cruisers. They are not on there now because they are using the battleships as training places for engineers.

That 1,000 for ship detachments is based on the actual strength of the guard required for ships that have no guards now but are entitled to guards according to orders of naval operations.

*Required Temporary Strength, United States Marine Corps
(Including One Division in France)*

Strength of Marine Corps, including one brigade in France.....	44,653
Strength of division plus 50 per cent for replacements.....	37,710
Strength of brigade plus 50 per cent for replacements.....	11,019
Increase to make division.....	26,691
Total.....	71,344

At the time that the foregoing statement was made by the Major General Commandant the regular annual book of estimates contained no provision or recommendation by the Navy Department to Congress for an increase in the enlisted strength of the Marine Corps, but under date of February 12, 1918, the Secretary of the Navy sent to Congress the following recommendation in the supplemental estimate: That the authorized enlisted strength of the active list of the Marine Corps is hereby temporarily increased from 30,000 men to 50,000 men.

The recommendation in the supplemental estimate was accompanied by the estimate of the cost of the increase recommended.

The full Committee on Naval Affairs of the House of Representatives recommended the adoption of the following provisions in the Naval Appropriation Bill:

That the authorized enlisted strength of the active list of the Marine Corps is hereby temporarily increased from thirty thousand to fifty thousand, this authorized strength being distributed in the various grades of the enlisted force in the same proportion as those authorized at the date of the approval of this Act: Provided, That not more than 25 per centum of the authorized number of privates in the Marine Corps shall have the rank of private, first class, which rank is hereby established in the Marine Corps.

The rank and title of Major General of the Marine Corps is hereby created and the President is authorized to nominate, and by and with the advice and consent of the Senate, to appoint one Major General of the Marine Corps.

Also the following provision:

Provided further, That, based on the temporary increase of enlisted men of the Marine Corps herein authorized, the President, by and with the advice and consent of the Senate, is authorized, in his discretion, temporarily to appoint three brigadier generals, twelve colonels, and twelve lieutenant colonels in the Marine Corps; said temporary appointments shall continue in force only until otherwise directed by the President or until Congress shall amend or repeal the same and not later than six months after the termination of the present war.

Also the following provision:

That the additional temporary officers authorized in the various grades and ranks of the Navy and Marine Corps in accordance with the next preceding section may be temporarily appointed to serve in the grades or ranks to which appointed or promoted by the temporary advancement of officers holding permanent and probationary commissions, by temporary appointment of commissioned warrant officers, warrant officers, and enlisted men of the Navy, and warrant officers, noncommissioned officers, and clerks to assistant paymasters of the Marine Corps, commissioned and warrant officers of the United States Coast Guard, citizens of the United States who have had previous naval or military service or training and other citizens of the United States specially qualified; Provided, That in making appointments authorized herein the maximum age limit shall be fifty years for enlisted men to ensign, enlisted men of the Navy to warrant rank, candidates for assistant surgeon, noncommissioned officers of the Marine Corps to commissioned rank, members of the Marine Corps branch of the Naval Militia and National Naval Volunteers, Marine Corps Reserve, and civilians specially qualified to commissioned rank, and warrant officers of the active list of the Marine Corps appointed to commissioned rank, and temporary chaplains and temporary acting chaplains: Provided further, That graduates of the Naval Academy and warrant officers duly commissioned in the Navy or Marine Corps in accordance with existing law shall not, by virtue of this Act, be required to receive temporary appointments; and the class of midshipmen graduated from the Naval Academy on March 29, 1917, and the classes to be graduated hereby, may be commissioned effective from date of graduation.

The total amount of money appropriated for the Marine Corps in the bill, exclusive of public works, \$95,673,512.64.

Under the head of public works for the Marine Corps, the following recommendations are made:

For the erection of a lumber shed and necessary railroad sidings on land now owned by the Government and occupied as a portion of the Depot of Supplies, \$35,000.

The unexpended balance of \$40,434.23 of appropriation

of \$200,000 in the Act approved June 15, 1917, making appropriations to supply deficiencies, for the purchase of additional land, Depot of Supplies, Marine Corps, Philadelphia, Pennsylvania, is hereby made available for the purchase of a lot of land lying on the south side of Alter Street and beginning about sixty feet west of Broad Street in the city of Philadelphia, extending about 210 feet and 6 inches on Alter Street and extending south about 40 feet, including all buildings thereon and for adapting said buildings for uses connected with said Depot.

Marine Recruiting Station, Port Royal, South Carolina: For twelve additional barrack buildings, four lavatories, and six mess halls, \$60,00; dredging and reclaiming marsh land, \$35,00; sea wall, \$25,000; lining dry dock with concrete, \$25,000; street paving, \$7,000; cement sidewalks, \$7,000; trees and shrubbery, \$1,000; in all, \$160,000.

The President is authorized to acquire under the authority and provisions of this Act all of the remaining portion of Paris Island for the enlargement of the Marine Recruiting Station, Port Royal, South Carolina.

Marine Barracks, San Diego, California: Toward the establishment of a Marine Corps base, \$1,500,000.



REPORT OF THE SUB-COMMITTEE FOR INVESTIGATION OF CONDUCT AND ADMINISTRATION OF NAVAL AFFAIRS

HON. L. P. PADGETT,

Chairman of the House Committee on Naval Affairs:

The subcommittee appointed, just prior to the holiday recess, to inquire into the activities of the Navy, since our entrance into the war, submits to the full committee the following report:

* * * * *

THE MARINE CORPS

The Marine Corps, though inherently a part of the Naval Establishment, has its own separate and distinct organization with separate military and administrative staff departments, the latter of which includes a separate supply bureau, the quartermaster's department. It has also its own paymaster's department.

The committee was much impressed with the keen, personal, active interest shown by Gen. George B. Barnett, commander of this corps, together with the officers under him, in everything pertaining to the welfare, comfort, and advancement of the enlisted personnel. This individual interest on the part of the officers is a very large contributing factor, we believe, to the well-known high efficiency and splendid spirit and morale of this corps.

About a year and a half ago Congress began to increase the strength of the Marine Corps, which consisted then of 344 officers and 9,921 enlisted men. By legislation approved August 29, 1916, authority was granted to increase it ultimately to 693 officers and 17,400 enlisted men. Later, after war was declared, a further temporary increase was authorized on May 22, 1917, for the duration of the war, permitting enlistments to a strength of 30,000 enlisted men (exclusive of reservists) and allowing 1,197 officers. About a year after this first legislative authority was granted, the actual strength of the Marine Corps including reservists and National Naval Volunteers, was 32,288 enlisted men and 1,120 officers. Thus it will be seen that the Marine Corps more than trebled its former strength in officers and enlisted men within this comparatively short period.

Today the Marine Corps numbers 1,230 officers and 36,334 enlisted men.

The actual enlistment was accomplished through the usual methods of recruiting from amongst volunteers from civil life at a time when the Army, Navy, and National Guard organizations were all working in the same field with the same object of filling up their authorized quotas. As new men came into the corps, clothing, equipment, and military stores had to be provided, and immediate and adequate methods taken for their health, their instruction, and training. The satisfactory accomplishment of this task required teamwork on the part of the officers in command and the military and administrative staff departments. The pre-war methods of the Marine Corps in recruiting, training, and administering to the needs of the corps were adapted at once to the situation incident to this increase.

We find that, besides taking care of new appointments in the commissioned grades and the enlistments and the training of this additional force, the Marine Corps has attended without a hitch to its ordinary and regular duties of guarding the navy yards and naval stations, both in and outside of the United States. It has furnished expeditionary forces for duty in France and elsewhere outside the United States, and supplied marine detachments for all battleships, cruisers, and other naval vessels placed in commission during existing hostilities. At the same time, it has kept a force of officers and men in Haiti and Santo Domingo to insure continued good order against certain insurrectionary elements amongst their inhabitants. We mention one instance to show the efficiency of the Marine Corps' methods of training raw personnel. The rifle is the weapon of the marine. When the Marine Corps was, roughly, 10,000 enlisted men before the war, 6,118 of that force were rated as so efficient in the use of this weapon that they were under the law entitled to an increased pay. Today the Marine Corps of 36,334 enlisted men has 22,577 men similarly rated. This shows that it has actually increased its prewar percentage of proficient marksmen.

It has been the established policy of the Marine Corps in pre-war times to fill its commissioned personnel, as far as possible, by promotions from the ranks, and no appointments are made in commissioned grades direct from civil life. We most heartily approve this policy as rewarding the tried and true amongst the enlisted force.

All of the emergencies the Corps has been called upon to meet

have been met by the officers and enlisted men in the most expeditious and efficient manner without either friction or confusion. These results, not only vindicate the system of organization, but also reflect credit upon those officers who are responsible for the maintenance, direction, and efficiency of the corps.

There are today on the firing lines in France no better trained, no braver no more effective fighting force than our own marines now serving there, and we hope their number may soon be largely increased. Both officers and men are anxious to go. Thoroughly equipped and splendidly trained, as they are, in the arduous methods of modern warfare, we feel that theirs will be a service of results, which the nation will always remember with ever-increasing pride.

(Signed)

W. B. OLIVER,

Chairman Subcommittee.

W. W. VENABLE,

ADAM B. LITTLEPAGE,

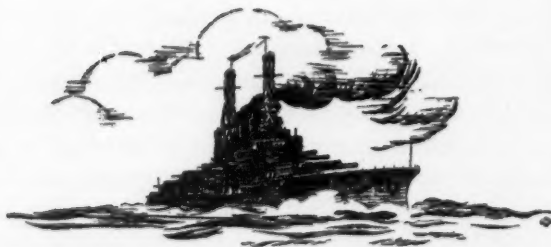
JAMES C. WILSON,

FRED A. BRITTEN,

JOHN A. PETERS,

FREDERICK C. HICKS,

Committee.



THE MARINE CORPS ASSOCIATION: A PLEA FOR COOPERATION AND A BIT OF INTROSPECTION

COLONEL ELISHA THEALL, U. S. M. C., SECRETARY-TREASURER,
MARINE CORPS ASSOCIATION

It ain't the guns nor armament,
Nor funds that they can pay,
But the close cooperation
That makes them win the day.

It ain't the individuals
Nor the army as a whole
But the everlastin' teamwork
Of every blooming soul.

—Kipling.

THE Marine Corps Association was organized at Guantanamo, Cuba, on April 25, 1913, and contains the following article in Section 1, of the Constitution, Article 2:

"The purposes for which the Association is formed are to disseminate knowledge of the military art and science among its members, and to provide for their professional advancement; to foster the spirit and preserve the traditions of the United States Marine Corps; to increase the efficiency thereof; and to further the interests of the military and naval services in all ways not inconsistent with the good of the general government."

The Association has for its spokesman the MARINE CORPS GAZETTE and it must be considered that the value of the MARINE CORPS GAZETTE determines in a great measure the value of the Association in respect to its attempt to "disseminate knowledge of the military art and science among its members and provide for their professional advancement." In order that the magazine may be made a real spokesman of the Association its management must necessarily have the cooperation of the entire membership of the Association. Cooperation among other things means the contribution of articles to the magazine which tend to the common good, especially to the professional advancement of the Corps and the preservation of its traditions. Not only does it mean some work out of office hours or after taps to prepare well-considered articles but it means honest, constructive criticism of the management of the Association and

particularly constructive criticism of its spokesman, the MARINE CORPS GAZETTE.

The present management of the Gazette should and does invite suggestions and welcomes wholesale criticism and is ever mindful that an honest, constructive criticism, no matter of how unfavorable a nature, will cause more progress than idle acquiescence or even favorable comment. Particularly does the present management value suggestions as to increased activity of the Association outside of the publication of the GAZETTE, remembering, however, that activities looking to the advancement of legislation for the benefit of the Corps is not permissible under the rules of the Association.

Never in the history of the Corps has the necessity for unity of purpose and hearty cooperation been more urgent than at the present time. The Corps has suddenly expanded from 10,000 to 36,000 men, counting reserves, with a probable increase of 20,000 or more men. It becomes absolutely necessary that the absorption of this recruit material be of such a nature that the Corps remain closely knitted together in its esprit, in its military activity and particularly in the coordination of its theoretical and practical instruction and the maintenance and increase of its fighting efficiency. The efficiency of the Corps as a fighting machine must not be thinned out from the solid stuff to a mere veneer.

Not only have the activities of the line of the Marine Corps greatly increased, but the activities of the Quartermasters, Adjutant and Inspector's and Paymaster Departments have been greatly enlarged. Activities of the line have become more varied in the creation and enlargement of the technical companies, battalions, and flying sections and squadrons, such as exist in the Advanced Base Forces and elsewhere; the creation of machine-gun companies and battalions, together with a very ambitious development in field artillery. All these increased activities are in addition to the general increase in the activities of the purely infantry companies, such as the school of grenadiers, the bayonet, signals, field fortifications, such as the building of and particularly the holding of trenches.

Unity of purpose and hearty cooperation can be best realized if each and every officer not only understands the special duties of his particular organization, but also understands thoroughly the capabilities and more especially the limitations of the branches or units of organizations other than the particular unit in which he happens to be serving. If each responsible officer and noncommis-

sioned officer has such knowledge, although perhaps even in a general way, can it be doubted that a powerful fighting machine will inevitably be developed, especially when coupled with the spirit of "pep and pull" for the Corps.

In what better way may the knowledge of specialists, gained as the result of actual experiences in the field, by experiment or by study, be conveyed to the members of the Corps than by the publication of these articles in the *MARINE CORPS GAZETTE*? Is it not really a part of the military duty of every officer of the Association to contribute ungrudgingly his share of knowledge for the benefit of the many, so that each may cooperate and understand the capabilities and limitations of all military units in each and every military task or problem.

Is the phrase "dissemination of knowledge of the military art and science among the members of the Association and the improvement of other professional attainments" to be a meaningless, high sounding phrase in the constitution of the Association or is it to be treated as if it meant what it says, and is each individual member of the Association ready to foster the spirit and preserve the traditions of the Corps? If we mean what we profess, why not think, write, suggest and criticize so that greater improvement and greater progress may be made. Complacency or idle acquiescence will not make the Corps measure up to the "A" sign of the Publicity Bureau.

The Government has a military organization in the Marine Corps which has been recognized as efficient and its record is one of which every member of the Corps is justly proud. No branch of the military of the United States in time of peace has seen service under fire under such varied and such interesting conditions as has the Marine Corps. The distinction in this field of activities has warranted the confidence which has been placed in the Corps by the Congress and people of the United States. Since the Spanish war, overseas expeditions in which the marines have participated have taken place every year since the day of the landing in Samoa to repulse the attack of Chief Mataafa in 1899; the defense of the legations in Tientsin and Peking in 1900; the landing in Panama in 1901; in Boca del Toro and Colon in 1902; San Domingo City, 1903; the establishment of Camp Elliott in Panama, 1904; the relief of the 9th Infantry at Peking, 1905; in Havana and Cienfuegos, 1906; the relief of Kingston, Jamaica, and the protection of American interests in Honduras; the landing for ceremonies in Australia;

again in Panama in 1908; in Nicaragua in 1909-10; in Cuba, 1911-12; Nicaragua and Santo Domingo, 1912; Cuba again in 1913; Haiti and Vera Cruz, Mexico, in 1914; also Santo Domingo again in 1914; Haiti and Santo Domingo in 1915-1916, and the establishment of a Gendarmerie in each; in the Virgin Islands, 1917; and not forgetting the expeditionary force now in France.

Certainly those who participated in these expeditions and other activities might write thousands of interesting pages to preserve the best traditions of the Corps and yet the greatest task confronting the editorship of the GAZETTE is that of persuading officers to contribute articles, the purpose of which is to carry out the constitutional requirements of the Association. If such cooperation is attained the Marine Corps Association would indeed be a live and extremely effective institution.

In the absorption of the recruit material in the recent increase and the probable absorption of another increase will it not be of benefit to indulge in a bit of introspection? Should we not examine ourselves closely to take an accounting as to whether the efficiency of the Corps has been kept real and not partly founded upon publicity and upon the past performances of the Corps, when it was much smaller. Is the fighting efficiency of the Corps still so securely established and guaranteed that it is capable of successfully doing its full share, in combat on land and sea against the tremendously efficient fighting machine which is confronting the military and naval establishments of the Allied powers. Has the Corps ever met such organized opposition and can the same effective performance be guaranteed as in the past? If not, why not?

Should marine officers cooperate and coordinate in planning campaigns in so far as the Marine Corps is concerned, in the office of Chief of Naval Operations, so that intimate touch with the sister service may be maintained, as was contemplated by the law which created that office. Is the Marine Corps familiar with the plans of the Army in expeditionary duties, campaigns, etc., and should Marine officers cooperate in that work?

Has the Corps such a military staff as to care for a military organization which has grown larger than was the army of the United States before the Spanish War? The Corps has for its mission not only operations with the Army and Navy but peculiarly distinctive operations and duties of its own.

Should there be developed an organization which studies, digests,

reports and files plans for probable expeditions, particularly an organization for the study and analysis of past campaigns and for the study of inherent interests of nations, especially as affecting the Western Hemisphere and Caribbean Sea and the policies which logically follow? Should not such an organization take up the study of the theatres of possible operations of the Corps and the sources and means of supply; the study of tactics so that they may be constantly up-to-date and conform to the character of the weapons to be used and work to be done, the study of the logistic aspects involving the requirements for supplies, also the study of an organization for war providing for the most effective flow of authority and the mobilization of all stations and the execution of the plans as previously agreed upon, and the study of the defense against enemy propaganda and the use of counter propaganda.

Why not write about and discuss these matters, so that we may be trained thinkers in the broad subject of the national defense, as well as the trained barrack master and drill masters. Long ago have disappeared the complacent days when the service of the average marine officer "was notable for its deadly monotony of the ceaseless grind of drill and chasing sentries, with an uneventful cruise thrown in."

Will not articles relating to the development and the coordination of the Quartermasters Department, Adjutant and Inspectors and the Paymaster Department with the line be most beneficial, both from the viewpoint of the staff officer and the line officer, coupled with the "pull together" spirit? Will not a great deal of paper work and lost motion be eliminated by the knowledge that each has of the other, with resultant coordination? Will not articles from officers or non-commissioned officers of the technical companies tend to better coordination of military effort in the field among the line officers themselves? Should not every commander in the field not only know the limit of the physical endurance of his men, camp sanitation, the capabilities of his supply and ammunition forces, but particularly the limitations of the various kinds of field communications, the nature and the limitations of engineering companies; the limitations of field lighting, and field entrenchments and fortifications; the limitations of mine-laying companies; the limitations of radio communication and the time and implements necessary to increase the range of wireless; the limitations of machine-gun mobility and performance; the disposition of the machine-gun companies and

machine-gun battalions; the capabilities and limitations of the various calibers of the field artillery; the limitations of motor car and armored car transportation; of horse-drawn and motor-driven vehicles; in short should not every officer have a thorough working knowledge of all branches?

Has the increase in the enlisted force caused any slack, so that the lower grades of the commission and noncommissioned ranks have not preserved that precision and that strict performance of duty (particularly guard duty) for which the Corps has been noted? Has that confident spirit of authority in the squad, company, battalion, regiment, and brigade been maintained and has that loyalty to the Corps become second nature to every man and officer? Does every man and officer in the Corps understand that when he joined the Corps he joined a military organization which requires blind obedience and the absolute subordination of all personal matters to that of his Government? Is there still that precision and that instant compliance with the order of the superior which is the essence of discipline? Is there that same insistence that a proper, smart salute be given by both man and officer, and are they smartly dressed and is equipment clean? Do man and officer stand at attention properly and are they on the alert? Has the man the confidence in his weapon born of experience in handling it on the range or simulated combat conditions in both day and night firing?

If the often stated efficiency of the Corps is still warranted and every man and officer is induced to believe his participation in the doings of the Corps adds to it, will not pride, *esprit* and a sense of superiority in military affairs be inculcated in each and every one, so that the Marine Corps will render an account of itself which is at least equal to the publicity given to its efficiency. Is the country justified in confidently believing the following statement about the Corps, published in the magazine *Arms and the Man* in the number of January 26, 1918, and if not, why not? The article states:

"Wherefore the work of the Marines when they get into action in France will be worth watching. On their use of the rifle will hinge the final verdict, because no finer shooting body than the U. S. Marines ever went to war."

Are officers and noncommissioned officers thoroughly familiar, both theoretically and practically, with the guard manual, drill and field service regulations, and with the Deck and Boat book of the

Navy? Is the theoretical instruction in the commissioned and non-commissioned classes conducted with interest and spirit rather than in a desultory manner? Are the senior officers of the Corps still giving close supervision to drills? Are the senior officers still so thoroughly familiar with all the details of the close and open order drill, of infantry, machine-gun and field artillery, that they might see defects at a glance and with greater knowledge cure the defects? Are practice marches, establishing outposts, practical minor tactics, etc., frequently undertaken? Are ceremonies carried out in exact detail so that the full value may be derived therefrom as regards precision? Are battalion and regimental parades properly executed as to detail? Is close attention paid to the details of the formation and dress of the battalion and companies, in regimental ceremonies, so that corresponding companies of each battalion are dressed on the same line in line of masses, and in all other details? Has the senior officer retained that grasp of details as to close and extended order drill and practical minor tactics, as well as the combat principles of offensive and defensive warfare, so as to be able to properly supervise and effectually correct defects? Should not the officer be held to that same accountability as to knowledge of his duties as is required of the sentinel in the knowledge of his general and special orders.

Has the question of liason between artillery and infantry been studied and perfected to the nicety which requires such exactness in combat, both day and night? How much night firing has been done and with what result? How much practice is given the artillery officers as to communication with airplanes and balloon observations and ranging from balloons? Does each battery and company commander and the commander of each higher unit thoroughly understand the limitations of airplane and balloon observations? The probable errors in estimation of range? The preparation of maps and map reading? In short is there such a mutual understanding of the duties of each of the units which comprise modern warfare so that clock-like teamwork can be guaranteed without any possibility of confusion? Why should not all officers belonging to the Association contribute their special knowledge to a generous degree, so that the efficiency of the Corps shall be on the constant increase, notwithstanding heavy recruiting.

How effective have been the steps taken in the Corps to advise and warn against enemy propaganda? This not only within the

military itself but behind the lines? Surely the Russian debacle and the Italian retreat cannot be regarded as pieces of good luck of the Central Powers. Must not the army at the front and the people in the rear be warned against the secret army of the enemy? Has not enemy propaganda demonstrated efficiency to such an extent that it has now become a military principle in war. It has been held by a high military authority of Germany that:

"It is the people who win or lose wars. The conflicts on the battlefields are merely incidents. There are no longer decisive battles in the old sense, when the issue of a campaign might be determined by the result of a single engagement. Nowadays the effect of battles is indirect and the enemy people is defeated through becoming demoralized."

How effectively is the Corps guarded by a defense against a propaganda of such a nature within and behind its lines? Are the men and officers of the Corps informed in the details of the arraignment of the Kaiser? Are they thoroughly familiar with all that has been done in violation of rules of international law and humanity so that they will, with an avenging spirit and clenched teeth, deliver the punch of success in every military mission or task that may be assigned to them in the present crisis.

There is not an officer or noncommissioned officer of the Association who might not contribute something of real value to the Corps in an article on any one of the foregoing subjects and hundreds of others. Would not a material advancement in the education in military affairs and still more efficient performance of duty in times of peace and war undoubtedly result? Is the Corps to continue to increase in fighting efficiency or is the Association satisfied to rest on the laurels of the past? The Marine Corps Association was organized with the idea of increased efficiency and it is up to the membership to see that it is kept keenly alive to its duty. This can be readily done by "the everlasting teamwork of every blooming soul." All together, heave and pawl.



PROFESSIONAL NOTES

[Liaison Between Artillery and Infantry in Offense. By Capt. E. B. Tarduchy. *Memorial de Infanteria*, June, '17. 10,500 words.]

Combat is the most powerful means of destroying the enemy, which is the principle object of warfare. Success in combat cannot be gained without having all forces under one command, and a single desire in every heart. There must be perfect liaison between the various branches of the service, and within these branches themselves, before a single man can command an army, or a single desire can be universally felt in the ranks.

The two methods of warfare are attack and defense. It may be said that defensive warfare is the best, because the defender can make the best use of his artillery, and afford the best protection for his infantry, but to obtain decisive results in warfare the attack is superior to the defense. Attack implies an infantry advance in the face of every conceivable weapon of destruction. The artillery protects the infantry in its advance, as advancing infantry is practically incapable of producing effective rifle fire. It also assures the infantry's chance of success. To successively use both arms a technical and moral liaison between them is necessary. Their action must be reciprocal and inseparable.

"HIGH AND LOW LIAISON"

"High liaison" is the indication, by the commander-in-chief, of the objectives of both arms. "Low liaison" is the uninterrupted communication between the executive commanders. "High liaison" affects the direction of an operation, while "low liaison" is a means of its execution. The former includes all information, orders, or notices from the commanding officers of troops to the artillery commander, and vice versa. The latter includes the details of co-operation between the two arms. These details are dependent upon the infantry action and change with its development. The higher commanders should not be bothered with them.

In "high liaison," artillery regulations try to block every attempt of a commander in handling troops of an arm to which he does not belong. In the original disposition of forces, the French commander-in-chief cannot locate his artillery—this being left to the artillery commander. In the German army, the commander-in-chief does

place the artillery, after consulting with the artillery commander, as the first infantry lines depend upon the position of the artillery.

The general plan of action, its development and modification, as well as its general progress, should be known to all the higher commanders of infantry and artillery, and should be transmitted by them to subordinates.

MATERIAL LIAISON

The artillery should always have an authorized agent of communication, near the general who directs the battle; and there should be constant telephonic communication from this agent to the battery commanders. The telephone presents a great many difficulties when used on the battlefield. These are chiefly due to the necessary wires. In permanent fortifications, or in trench warfare, these difficulties are lessened. Visual signals, when simple and not too numerous, may be used; but they must be thoroughly learned and carefully transmitted.

The artillery should always know the objective of its infantry, what formations it has adopted to take this objective, the obstacles in the way, the resistance encountered, and the nature and direction of any effective enemy's fire. In order to transmit this varied information, written messages and sketches are used.

Most armies have good signal systems but only those troops who are well drilled in signalling will be able to maintain liaison.

TACTICAL LIAISON

The old battle started with the cavalry, followed by the artillery, and finally ended by the infantry. Today, sound tactics require the simultaneous use of artillery and infantry. The artillery may do the first firing, but that is only due to its long range. The infantry is advancing over dangerous ground and out of rifle range. The artillery must cover this advance. Naturally the infantry suffers heavy casualties. When the infantry reaches the zone of effective rifle fire, it can make use of its two greatest combat assets—mobility and rifle fire. Finally there is the actual shock between hostile lines. During this time the artillery has not been silent for one moment and its fire continues even during the pursuit.

In order to secure liaison before every combat the commander of the troops waits until his artillery is in position. The infantry then takes up special formations and marches into the combat zone. An infantryman prefers to wait under fire half an hour so that the

artillery can properly place itself, rather than advance under the fire of poorly disposed artillery. Artillery can destroy infantry, but advancing infantry makes a very poor artillery target. The infantry must advance to draw the fire of the opposing batteries, uncovering their position to the artillery, which proceeds to neutralize them, thereby facilitating a further infantry advance. A halt by the infantry in this stage of the combat is most inadvisable. The infantry should not even halt to fire, as it means a loss of time and of desire to resume the advance. It is very difficult to keep the infantry from firing, as it carries the burden of the battle and wants to defend itself with its own weapons. The infantry should point the bird, and the artillery kill it.

Superiority of fire must be gained by the infantry before its final assault can be made. By superiority of fire is meant superiority of morale, material and effective fire. It does not mean an expenditure of ammunition greater than that of the enemy's; nor does it mean the infliction of the larger number of losses. Superiority of effective fire will depend upon the morale and upon the efficiency of each individual in rifle fire. The wild expenditure of ammunition is a sign of poor morale and individual fear.

Spanish infantry regulations state that at a certain phase of the combat the infantry, unless it gains superiority of fire, will find itself unable to advance even with artillery support. This is not true. It should be stated that at a certain phase in the attack it will be necessary for the infantry to open a concentrated, rapid and effective fire on the objective, thus disclosing the intended point of attack. In its first form, the regulation leads to the belief that the artillery fire will not be effective at all phases of the combat, when as a matter of fact, it is extremely so, but must be supplemented by rifle fire. In general, all infantry progress favors the defense while all artillery favors the attack.

Professional authors state that the artillery accompanies the infantry in its attack. This should be interpreted that the artillery with fire accompanies the infantry attack. The sight of a battery manoeuvring into position gives attacking infantry no moral or material aid, but the sight of continuous bursts of high explosives and shrapnel on the enemy's lines has a decided moral and material effect. It makes no difference how far the artillery is from its infantry as long as the foot soldiers can see the effect of artillery fire. In fact, it is exceptional for artillery to venture within the enemy's

rifle fire. Besides artillery on the move is out of action, and it is much more effective in well protected, semi-permanent positions.

The German regulations state that artillery in combat should occupy three positions: The first, at long range from the enemy; the second, at between 2000 and 2200 meters; the third, at 1000 meters. These distances vary with the terrain and the nature of each engagement.

With respect to the time when the artillery should change its range there are two opinions. The first is, that the artillery should shift its fire on enemy reserves and supports in plenty of time to avoid any damage to its own infantry. The second opinion is, that the artillery should continue its fire on the enemy's first line position until the instant of assault even at the risk of injuring its own infantry. On the approach of the infantry to the assault, the friendly artillery will change from time fire to percussion fire. (In order properly to prepare infantry for war, artillery should practice firing over advancing infantry at drills and maneuvers.) Next, the infantry charges, making the final rush with fixed bayonets for the desired position. Too much value cannot be given to the bayonet. Troops who have confidence in their bayonets will learn to look upon the entire battle merely as a preparation for the infantry charge, and with this confidence will come the dominant desire to conquer, which makes a bayonet charge irresistible. Once the enemy's position is taken the artillery is the first arm to move up into this position, still supporting the infantry against the ever-increasing hostile artillery fire. The infantry, for its part, will protect the artillery against attack. The closest infantry units will protect the artillery flanks and rear. No special artillery guard will be necessary. The security of this arm is threatened most at the beginning of an action when it must depend for protection upon the infantry in its immediate front. A special guard, consisting of as high as two companies per regiment, may be given the artillery. As this breaks up the infantry regiment, it is much better to organize and train special units in time of peace for this duty. This would not break up a regiment's combatant strength, and the artillery guard, being specially trained, could even be used to replace casualties in the gun squads.

MORAL LIAISON

All plans and efforts will fail under the stress of battle unless there is a thorough understanding between officers of artillery and

infantry. This cannot be gained by superficial friendships between both arms. It is a brotherly understanding and appreciation of each other's abilities and limitations. It must be gained in peace time, and it necessitates the subordination of personal ambitions and the feelings of superiority that officers of one branch have for those of another. There must be a mutual feeling of dependence and confidence. The infantryman must know how much the artilleryman can give and how it is given; and the artilleryman has to know what his infantry does and its manner of acting. There should be a common doctrine published for the study of all army officers, dealing with the use of each arm and its relation to every other arm.—*International Military Digest*.

RAIDS—TRENCH

[German Raid on British Trenches. Translated from captured German documents. *Infantry Jour.*, Sept., '17. 10,000 words. 4 sketches. 3 tables.]

The article includes the regimental orders for a raid, which took place on the British trenches near La Boisselle, April 11, 1916, the special orders issued by the commander of the raiding party, a table for the distribution of the artillery fire to support the raid, and special orders for a feint attack and a feint bombardment. The regimental report on the execution of the raid, including the feint attack and bombardment, and the report of the commander of the raiding party are given.

The preparation for this raid began on April 5th with the registration of batteries assigned and then in position. The raiding party consisted of six officers, one surgeon, one bugler, six stretcher bearers, fifty infantrymen and four pioneers. Three patrols of one officer and ten men were organized, with the remainder of the party held as a support. These patrols were to pierce the first-line British trenches and then return with what prisoners and booty they might be able to take. All men were equipped with gas masks and each wore as a distinguishing mark a white triangle of linen sewed on the breast and back. The men of the patrols were equipped half and half with pistols and rifles. Dummies were displayed by the Germans during the feint attack immediately after the firing of a mine.

From the German reports on the raid it was highly successful. The gas shells had completely confused and paralyzed the British. The wire at the point of entry had been so completely destroyed

on a width of 44 yards by 14 heavy and 70 medium *Minenwerfer* shells that the raiding party did not notice when they crossed the wire entanglement. The capture of 20 unwounded and 5 wounded prisoners, 1 Lewis gun, 21 rifles and other plunder was reported. It was claimed that only one man of the raiding party was slightly wounded.

The German deductions from this raid were (1) that much of the success was due to the use of gas shells; (2) that artillery with gas shells is most successful in mastering the flanking defenses; (3) that it is not well for the attackers to have their vision and breathing hampered by gas masks; (4) that when the enemy's trench has been successfully cleared for 150 to 200 yards and the enemy barrage has not opened on the point of exit, and advance to the second-line or even third-line trench could be achieved with small loss by fresh patrols; (5) and that prisoners should be examined by officers near their place of capture.—*International Military Digest*.

THE BAYONET

One of the provincial papers lately contained the substance of a lecture given by an officer of the Regular Army to the officers and noncommissioned officers of the local volunteers under the title of "The Spirit of the Bayonet." It was a lecture on fighting—fighting to kill; the speaker reminded his audience that primitive warfare was always hand to hand, and that even while today battles begin and are carried on at long range they are usually won at close quarters, or in consequence of the imminent menace that the victor is coming in with the bayonet. The bayonet, said the lecturer, had over and over again proved itself to be the best defensive weapon, as well as a good weapon of offense; the bayonet fighter must have confidence in himself and in his comrades; he must be convinced that he can kill his enemy, and in order to beget that confidence his training must be continuous and not spasmodic; it must be individual as well as collective. The German in this war has taught us the killing spirit, to feel that the only good Boche is a dead Boche; and were it not for this we should have been tempted to add to the lecturer's very useful hints on bayonet fighting the repetition of the directions which were given by the Colonel of the 50th Regiment prior to the assault of Fort Napoleon at Almaraz, and which may be taken as an instance of what one might describe as the tactical humanity of those days. This thoughtful officer reminded his men

that "time should not be wasted in the over-application of the bayonet on any one individual—a touch of a few inches being sufficient."—*Army and Navy Gazette*, London.

UNIFORMS

[Field Equipment for France. By David E. Wheeler, Reading War Hospital, Berks, England. *Jour. Military Service Inst., U. S.*, Sept.-Oct., '17. 2,500 words.]

A man's hat, whatever its pattern, should be as inconspicuous as possible. The English pattern steel helmet has proved very satisfactory and, for a change, the broad-brimmed felt hat is desirable.

A leather gaiter condenses moisture on its inner surface and even on short marches becomes wringing wet. Before the French adopted puttees they were practically free from "trench feet," but now suffer almost as much as do their Allies. It is fairly obvious that a tight bandage reaching from ankle to knee must cause engorgement of the veins of the feet and a long series of evil conditions result.

In summer the habit of marching without socks is recommended. French roads are hard, very dry and hot. To wear woolen socks under such circumstances is sure to soften the skin of the feet, causing them to blister more easily and making them less able to stand exposure the following winter. The best way to start in is to use at first plenty of grease and one pair of seamless lisle thread cotton socks; silk is better but more expensive. By the time a pair of these socks is worn to nothing the skin of the feet is tough enough to do without them.

The U. S. A. shoe is probably the best that can be provided. For winter wear larger shoes are essential in order that two pairs of heavy knit wool socks may be worn when on duty.

The soldier should be trained and equipped for raw, wet weather, scanty fires and close range fighting. This means waterproof uniforms and short, light carbines. Overcoats and puttees are to be avoided.—*International Military Digest*.

BOOK REVIEWS

Hand-to-Hand Fighting. By A. E. Marriott, Camp Physical Director, Army Y. M. C. A., Camp Sevier. New York: The Macmillan Company. Price, \$1.00.

This is a manual of eighty pages, with illustrations on almost every page, illustrating hand-to-hand fighting and personal defense. Many of the holds and attacks illustrated are on the jiu-jitsu and catch-as-catch-can wrestling style. However, as the object of the encounter is to disable or cause the surrender of the opponent, many holds and attacks which would not be allowed in wrestling are encouraged in these instructions. The system has been adopted by some of the companies of the Thirtieth Army Division, at Camp Sevier, S. C. It is claimed that the drilling in the various holds and attacks results in creating a greater confidence and self-reliance in bayonet attack and close-up encounter.

Small Arms Instructors' Manual. Compiled by the Small Arms Instructors' Corps. New York: E. P. Dutton & Co. Price, 60 cents, net.

This is an instructors' manual for an intensive training course in small arms, compiled by the Small Arms Instructors' Corps, and is intended to present an abbreviated and yet complete basic course to meet present conditions of efficiency. It is not intended to take the place of the War Department documents or the regular courses. The subject matter is compiled under the supervision of officers of the Regular Army, together with information contained in entente documents based upon experiences of the present war.

Marching on Tanga. By Capt. Francis Brett Young. Illustrated with the author's snapshots. New York: E. P. Dutton & Co. Price, \$1.50, net.

This is a vivid account of the British campaign under General Smuts in German East Africa by a member of the expedition. It is an extremely interesting book, in that it is so real and yet seems so imaginative. Thrilling incidents are related in the campaign which might seem possible to have been conceived only in fiction of adventures. It is an excellent account of modern fighting in tropical Africa.

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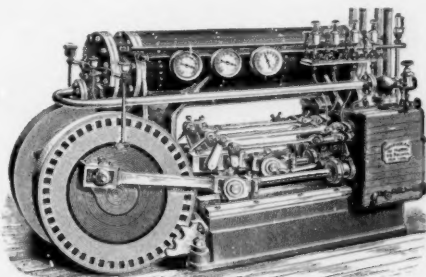
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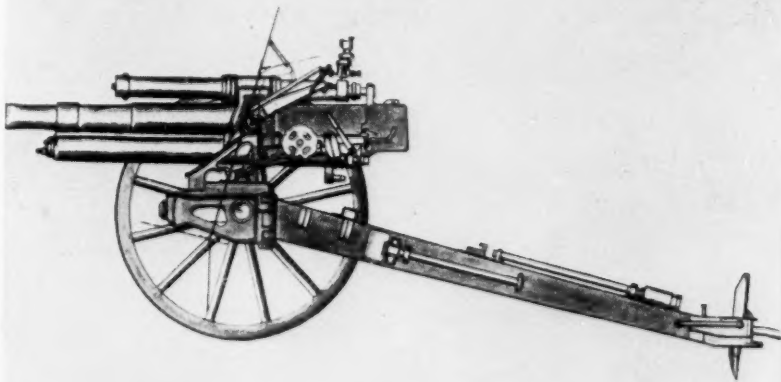
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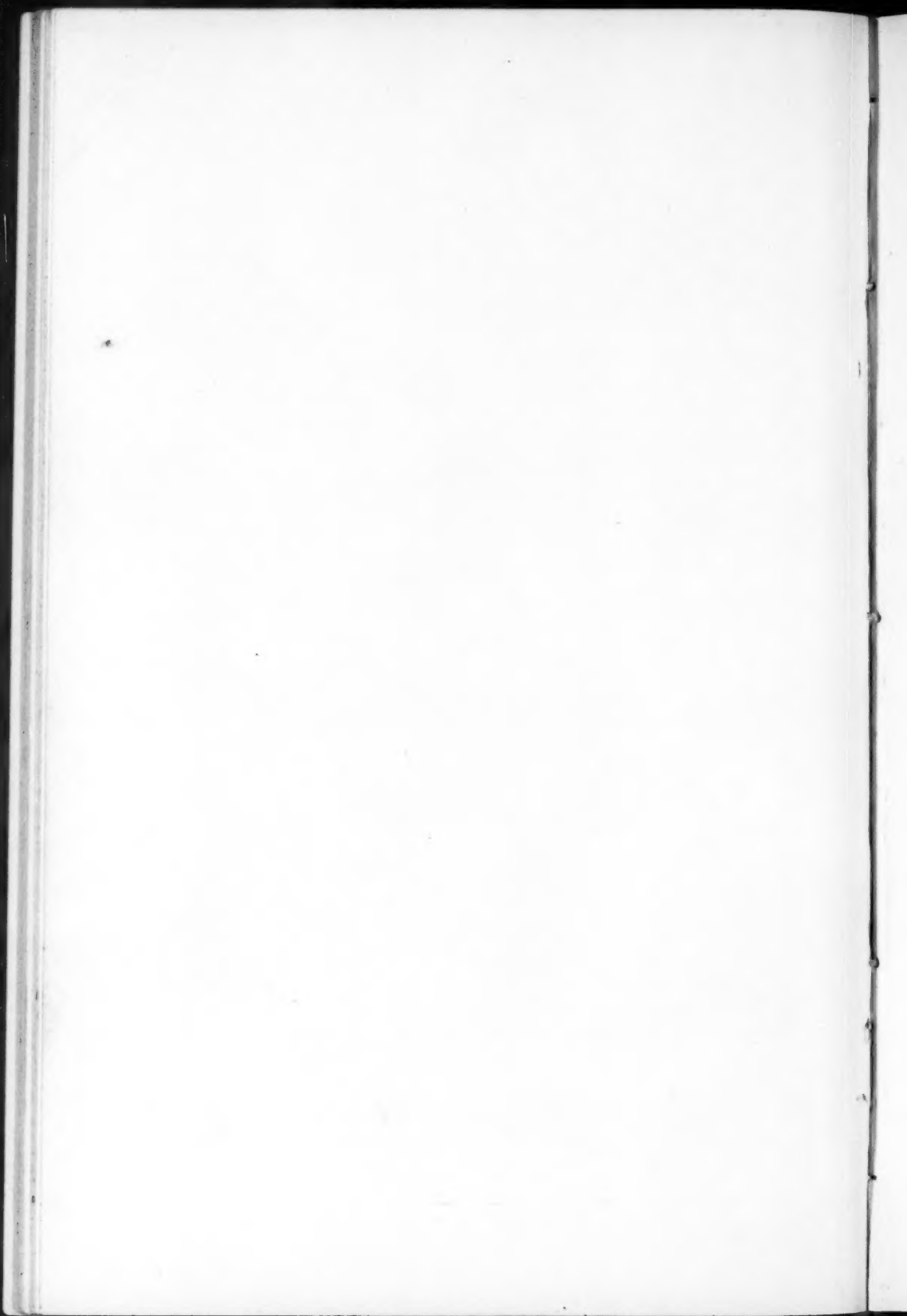
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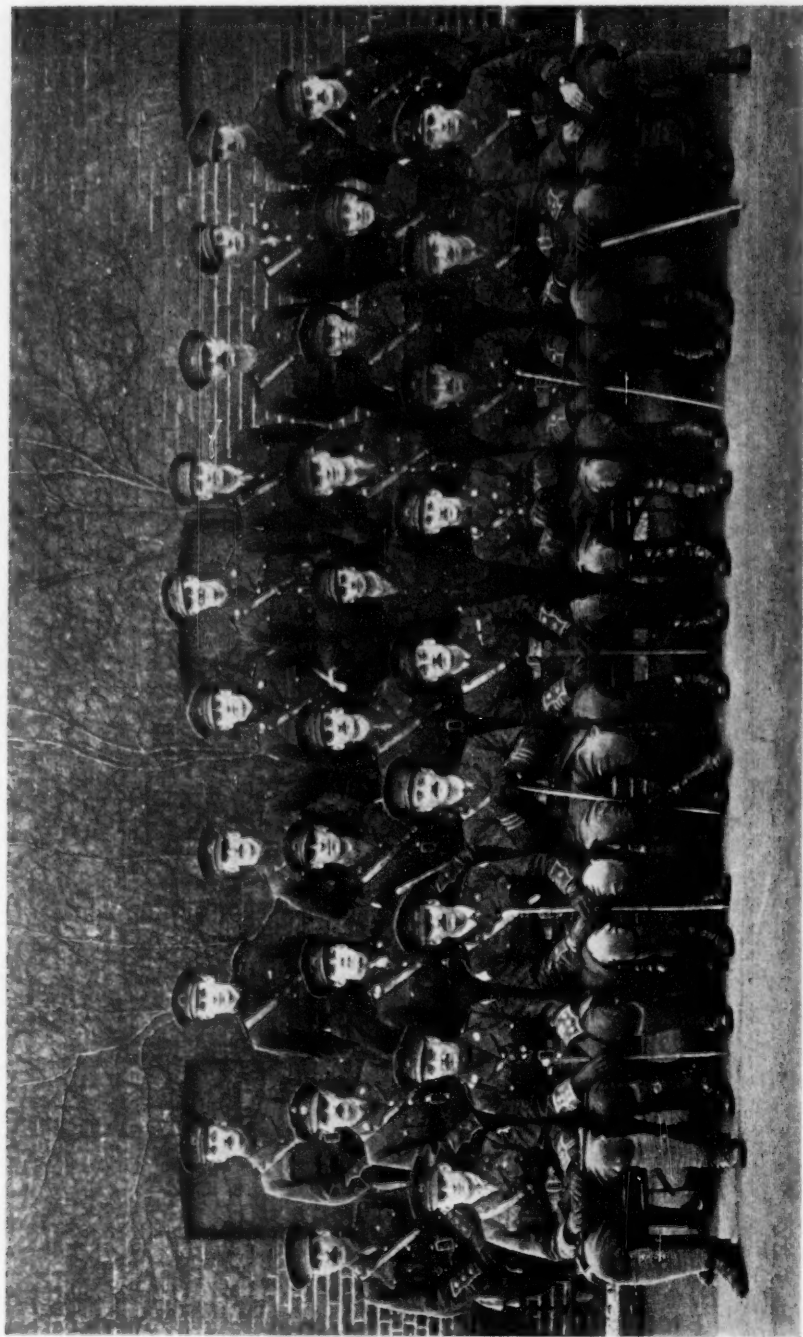
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